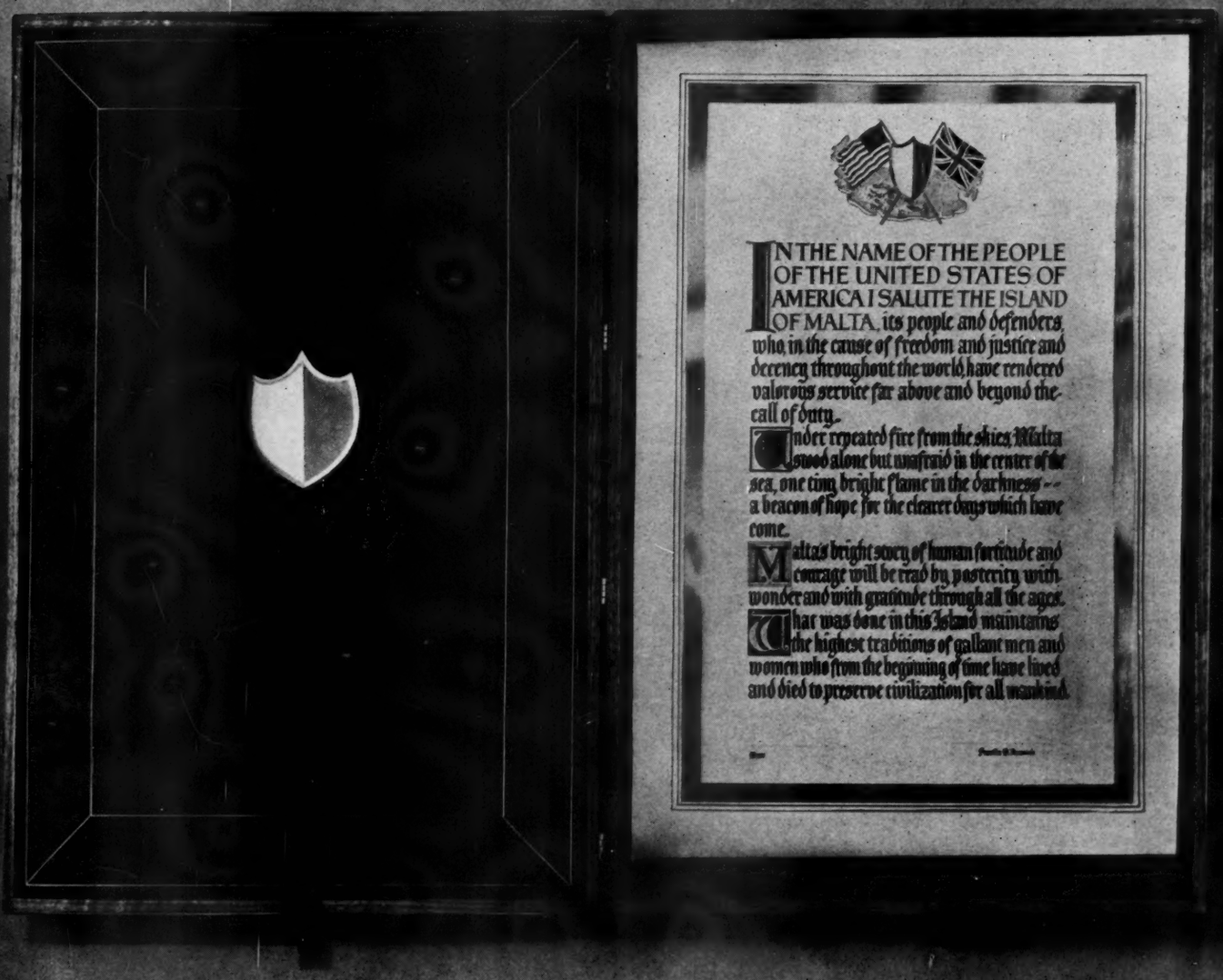
PRINTING EQUIPMENT *Engineer*


IN THE NAME OF THE PEOPLE
OF THE UNITED STATES OF
AMERICA I SALUTE THE ISLAND
OF MALTA, its people and defenders
who, in the cause of freedom and justice and
decency throughout the world, have rendered
valorous service far above and beyond the
call of duty.
Under repeated fire from the skies, Malta
stood alone but unafraid in the center of the
sea, one tiny bright flame in the darkness --
a beacon of hope for the clearer days which have
come.
Maltas bright story of human fortitude and
courage will be read by posterity with
wonder and with gratitude through all the ages.
What was done in this Island maintains
the highest traditions of gallant men and
women who from the beginning of time have lived
and died to preserve civilization for all mankind.

SEE FIRST EDITORIAL PAGE FOR
EXPLANATION OF MALTA CITATION

FEBRUARY, 1944

adding Romance to the American Way

We took them joyously into our hearts just as soon as we learned to read—those delightful character creations, Huck Finn, Uncle Tom, Rip Van Winkle, and others. To us they actually lived and added romance to our lives. They shaped our ideals to wholesome patterns. The introduction of these fancied heroes into our American way of living, and the intermingling of their exploits with our emotional growth, can be traced conclusively to one thing—the initiative of the PRINTER. All thinking, all writing, needs a vehicle of transmission. Newspapers, magazines, and edition books carried American literary idols into millions of homes and hearts. National life was influenced by it. Progress was accelerated. The cultivation of intelligence by the press, a golden rule of liberty, can be thanked for America's greatness. Opportunities will never cease, and printers, perpetually resourceful, will enact their greatest role in tomorrow's new demands.

NOW AVAILABLE. Complete and comprehensive Guide Book of Essential Wartime Printing and Lithography. 64 pages (8½" x 11") of detailed description and information on every government public relations problem which can be aided by printed promotion. We shall be glad to obtain a copy for you . . . or write direct to Graphic Arts Victory Committee, 17 East 42nd St., New York City.

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ALL-SLUG Composition Advantages

Slug composition offers many advantages in these days of manpower shortage. Thoughtful printers are using type in slugline form just as much as possible in their printing, but it is only in those plants with Ludlow equipment or access to Ludlow composition that the fullest benefits can be obtained. So long as a single line in a form is set in single types, many of the benefits of operating on a completely all-slug basis are lost.

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Full information about the Ludlow system and advice on how to obtain the maximum usefulness, efficiency and service from your Ludlow and Elrod will be sent upon request.

Some Basic Advantages of the Ludlow System of *ALL-SLUG* Composition

- Rapid all-slug make-up
- Easy and solid lock-up
- Composition once set and corrected stays correct
- Typefaces always new and unbroken
- Multiple forms by repeat casting to save press impressions
- Forms may be held indefinitely without impairing the type resources of the composing room
- No worries about work-ups of spaces or quads when printing direct from the form
- Many other exclusive Ludlow production advantages

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Set in members of the Ludlow Tempo family

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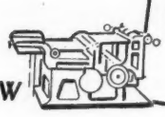

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Goss promises this much . . . When THE DAY comes printers will have better presses than ever before. We are learning many things in in our "all-out" war production. They will be put to good use in peacetime production.

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GOSS

PRINTING EQUIPMENT *Engineer*

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

VOL. 67 NO. 5

MacD. SINCLAIR.....Editor
ADAM HENRI REISER....Associate Editor
J. HOMER WINKLER. Contributing Editor

Member Controlled

CCA

Circulation Audit

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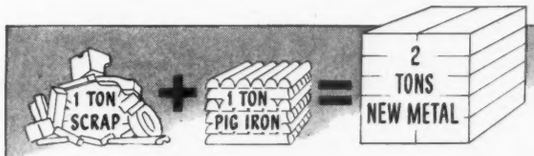
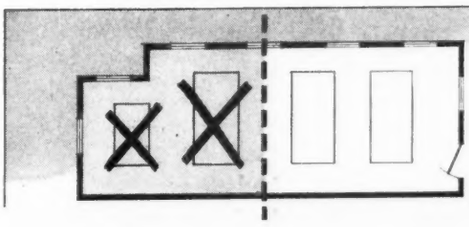
A way to help the war effort—and realize immediate and post-war pressroom improvements by scrapping old printing machinery under the Miller Wartime Scrap Allowance Plan.

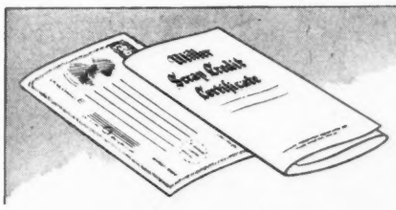


1. Each ton of scrap printing machinery metal helps make twice that amount of new metal—keeps tanks rolling, ships floating, guns firing (not forgetting that all machine replacement parts depend on metal supply).

2. Add your scrap to that contributed by hundreds of other American pressrooms under the Miller Wartime Scrap Allowance Plan, which has been enough already to build several warships.



3. "Trim ship" for wartime exigencies, by keeping only profitable equipment and discarding all unneeded machinery. Full efficiency in production with minimum overhead is a wartime economy.



4. Obtain Miller Credit Certificates now (of triple value when U. S. War Bonds are bought with scrap proceeds) exchangeable against cost of Miller Automatics for postwar pressroom modernization.

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miller
WARTIME SCRAP ALLOWANCE PLAN

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PITTSBURGH, PA.

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NEW YORK · CHICAGO · ST. LOUIS · BOSTON

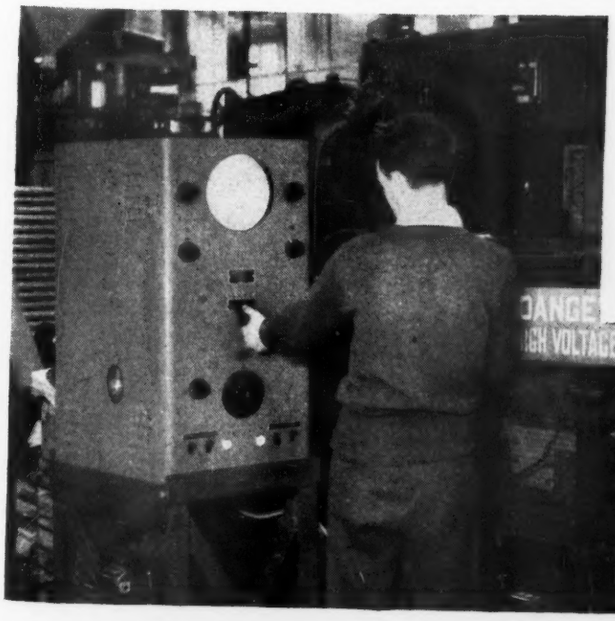
SHORTS STYMIED

Voltage surges which accompany switching and frequent starting and stopping of motors impose high dielectric stresses on the coil insulation, and can cause harmful short circuits. Yet this is an unavoidable condition of service for many motors.

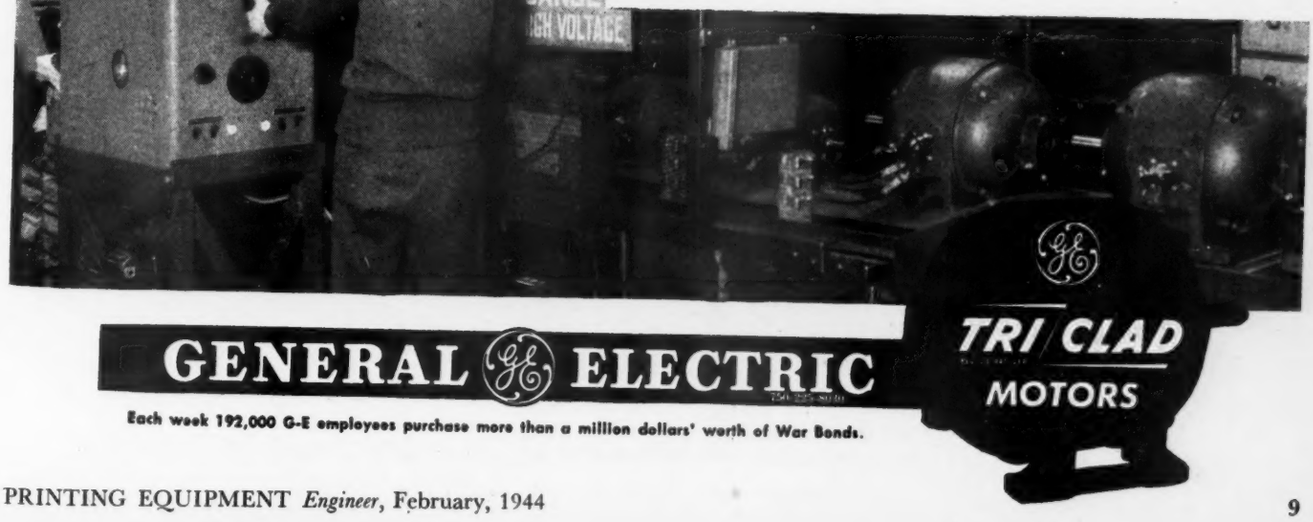
The grinder shown here, for example, starts and stops every time a finished part is removed and a new part inserted. But the two Tri-Clad motors that drive it have been built to withstand safely the voltage surges ordinarily encountered in this type of service. Their ability to "stymie" shorts was proved by *the new General Electric test* described below.

External grinder, equipped with two Tri-Clad motors, installed in the milk-machinery manufacturing plant of the Rite-Way Products Company, Chicago, Ill.

New high-potential, electronic surge-tester verifies strength of TRI/CLAD motor windings



This electronic test of insulation makes a "cardiogram" of every Tri-Clad motor winding, ferreting out weaknesses that might lead to shorts caused by voltage surges in service. It tests each turn, coil, and phase group of the windings for adequate insulation strength to withstand the "steep front" high-voltage surges of actual service. First developed and applied by G.E., it's one of the production tests which all Tri-Clad motors must pass as they come off our production lines. – *General Electric Company, Schenectady, N. Y.*



GENERAL ELECTRIC

Each week 192,000 G-E employees purchase more than a million dollars' worth of War Bonds.

Wood
NEWSPAPER
MACHINERY

War-Time Maintenance Hint

CHECK SETTING
OF LOWER TRIMMING TOOL
on Standard
AUTOSHAVERS

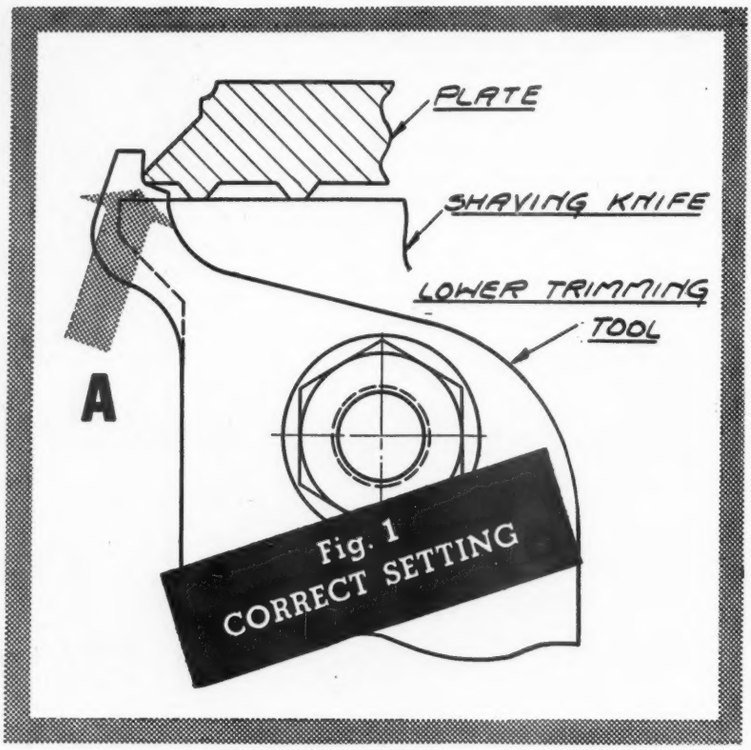
Accurate setting of the lower trimming tool of your Standard Autoshaver will help maintain its continued, trouble-free operation.

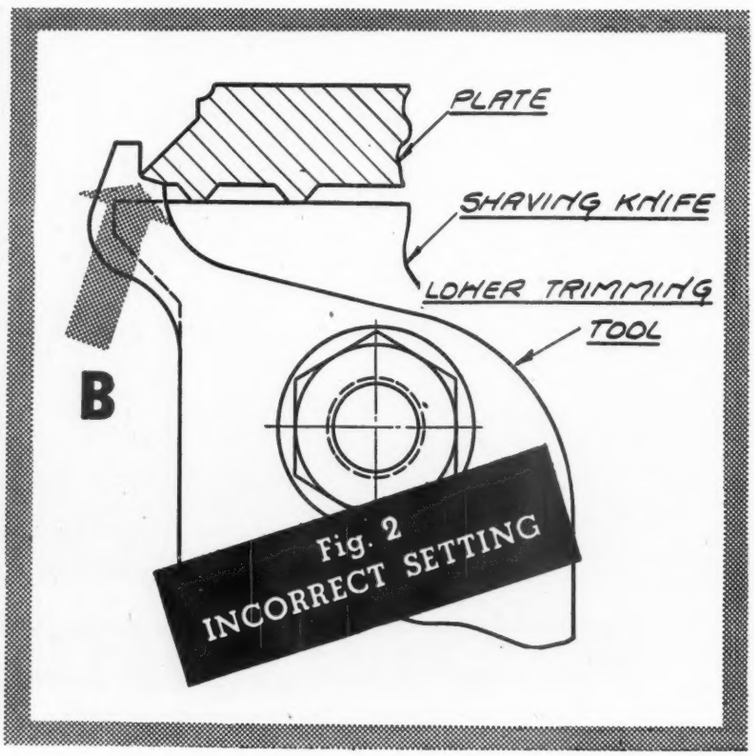
The proper setting is shown at A in Fig. 1. In this position only the *end* of the plate is trimmed.

If you have inadvertently adopted a setting like B in Fig. 2, it should be corrected. In this position, the tool will trim away some of the body of the plate. The extra chips may curl up, fuse to the trimming tool, and cause a jam on subsequent plates.

Wood Newspaper Machinery Corp.
Plainfield, N. J., New York Office:
501 Fifth Avenue, New York 17, N. Y.

Recent reprints, to complete your "War-Time Maintenance Brochure", have been mailed. Please write our New York office if you failed to receive them.





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More than 27,000,000 readers of seven magazines of general circulation listed here enjoy the advantages of reading text matter set on the Monotype. These advantages include clear and sharp printing by all processes; uniform word and letter spacing of text and of the short lines set around cuts; close fitting of characters; perfect alignment of both Roman and Italics; single-type printing of even color throughout — all contributing to easy readability and better understanding of the text without eye-strain.

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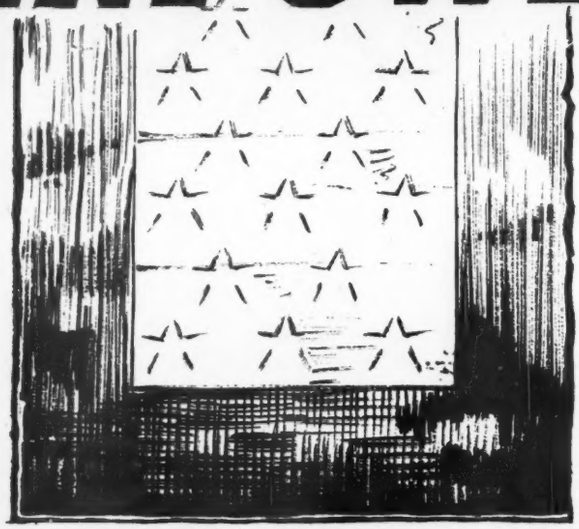
Composed in Monotype 20th Century Family with Monotype Jefferson Gothic, No. 227

Are You Short of Line Casting MANPOWER?



BLACK & WHITE MATRIX CONTRAST Service gives you Maximum Output Per Machine, Per Man-Hour, and it lessens fatigue caused by eyestrain

NOW—the most important problem before the printer and publisher is how to set as many Ems with older help. Many shops have lost their top young men and the oldsters are doing their utmost to carry the burden of wartime work.

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BLACK & WHITE

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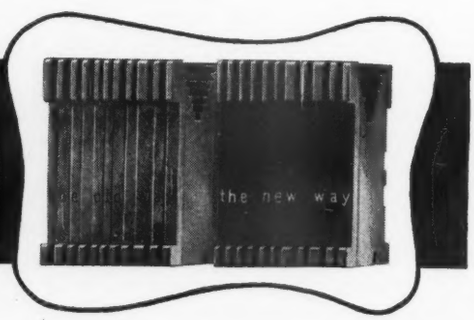


Properties of Plastics with Reference to Platemaking

Thermosetting Resins—In making plastic printing plates a thermosetting resin (Bakelite, for instance) is used for making a mold or matrix under pressure from a type form or original plate. The resultant matrix is used as a mold for making the actual printing plate. A thermosetting plastic is one which has only one plastic period under heat, after which the material is incapable of again becoming sufficiently soft, or plastic, so as to form a printing plate.

Thermoplastic Resins—A thermoplastic resin (Vinylite, for instance) is employed for actually molding a printing plate from a thermosetting mold. As distinguished from a thermosetting resin, a thermoplastic resin may be softened repeatedly by heating and hardened by cooling. Each time it is heated to the proper temperature it becomes plastic.

Plastics — Their applications in the printing industry — Plastic plates have assured use — Plastic molding process for electrotyping definitely successful — Other uses

MANY printing executives have become confused about the utility of plastics for printing plates. We think this state of mind exists because these executives have been thinking of various items which have been made from metal, particularly in relation to the "vanishing" supply of zinc, copper and electrotype backing metals as the result of Government's priority for implements used in pursuit of the war. Simultaneously, reports and opinions from a number of sources have been the cause of many executives believing that the printing industry really and truly will participate in the forthcoming "age of plastics"—if not now, immediately during the post-war period. Without authoritative guidance in technical matters, the printing plant executive doesn't really know what is before him. Perhaps the proper perspective in relation to plastics in the printing industry would be to assume a sort of middle ground as to their future assured use. At the moment, some applications remain to be proved in actual printing plant usage.

In an address before the January meeting of the Cleveland Craftsman's Club, J. Homer Winkler, assistant manager of Ace Electrotype Co. (Cleveland) and who also is secretary-treasurer of Printing Plates Research, Inc., discussed *Printing Plate Applications for Plastics*. Mr. Winkler discussed plastic applications primarily with respect to printing elements, including the new plastic molding process for making electrotypes. The following summary of his address before the Cleveland Craftsman's Club was prepared by Mr. Winkler:

DURING the past several years, experimental curiosity and technical research have combined to result in plastic applications for duplicate printing plates, electrotype molds, matrices for molded rubber plates, printers rollers, offset lithographic plates, tint materials, press plate bases, mounting material and it has been proposed to cast type from plastics. The ultimate extent of these applications will depend upon the degree of technologic perfection they may acquire, the availability of the materials required (and of the competitive materials), upon the economic competition of existant materials and processes and upon possible new developments of these existing processes.

Offset-Lith Plates

A satisfactory use of plastic coated plates for offset lithography has apparently been limited to military purposes. It is questionable whether the use of this kind of plastic plate will increase when zinc and aluminum are once more available in ample quantities and at probably a lower price than was scheduled before the war restrictions. Certainly for the better quality of offset-lithographic work, metal plates are at present in a superior position. The most likely use for plastic coated offset-lithographic plates seems to be for the small one color unites such as office and letter shop machines.

Not Feasible for Photo-engraving

The making of photo-engravings by the usual etching methods on plastic surfaces has been investigated extensively. The results of these studies have been compiled by J. S. Mertle in the report "Plastic Printing Plates," published

---

Front Cover Illustration

WHILE not strictly a printing job, the Malta Citation shown on our front cover page, was produced by employees of the Government Printing Office in Washington, D. C., under the direction of U. S. Public Printer Augustus E. Giegengack.

During his recent famous trip, President Roosevelt awarded this Citation to the inhabitants of the Island of Malta in the name of the people of the United States.

The Public Printer was commissioned by the President to prepare the Citation with utmost secrecy on November 15. Delivery of the completed Citation, properly packed and ready for shipment was set for November 24—just eight days later. The completed Citation was delivered to the White House 15 min. before the deadline, set at 3 p. m.

Genuine parchment (or sheepskin) was used for the scroll itself, approx. 16 in. by 24 in. size. The hand lettered wording and design were inscribed largely by Warren W. Ferris of the GPO's Division of Typography.

The Citation design consists of three elements—an outside heavy gold border, ¾ in. width; a top color design, and below this, the message itself. The Gothic black letter form is illuminated by three initials done in red, blue and gold.

The ornamental top design consists of two crossed flags, one of the United States and the other of Great Britain; and, above and between the crossed standards of the flags, of the Maltese shield in red, white and gold. This entire flag and shield design is superimposed upon a drawing of a contour view of the Island of Malta. Full colors are used in the flags and shield while, in contrast, the contour drawing is in a blue-gray tone wash, thus bringing into relief the ornamental design against the mountainous terrain of the Island.

The container is made of polished solid walnut in natural color. It is the work of A. B. Batton and Lee B. Robertson of the carpenter shop, and of Thomas Maloney and John Weingarden of the Binding division.

The lower half of the container is lined with royal blue plush, upon which the Citation itself rests. A removable weight piece made from laminated wood rests upon the scroll when the container is closed. This ½ in. thick weight is beveled at the edges and is covered on top with blue morocco trimmed with gold leaf design. A sheepskin center pattern is inlaid in the morocco leather top. The design of the inlaid piece represents the shield of Malta. The underside of the weight piece is covered with royal blue plush.

For shipping purposes, a padded canvas bag was made for the walnut container. This bag, in turn, was placed in a wooden shipping box with a carrying handle.

Plastic Impressions
Secured from Winkler Address:

PLASTICS for making printing plates have assured place in the industry. Most probable field will be for printing books and if the plate material can be improved with respect to press life and ruggedness, the box and carton printing field will present a decided possible application. Ad plates, dealer cuts and mat patterns can be made satisfactorily in plastics. Plastic sheets can be cut and tooled for use as tint materials.

• A new electrotype plastic molding process developed by Battelle Memorial Institute for Printing Plates Research, Inc., appears to be entirely practicable Better electrotype reproduction, particularly in process color work, greater accuracy, less molding pressure and elimination of graphite in the electrotype foundry are major benefits.

• Other applications are for coating non-metallic offset-lith press plates and making ink rollers.

• Most likely use for plastic coated offset-lith plates seems to be for office and lettershop one-color (black) units and shorter press runs.

• Production costs and the time element in the making of plastic plates may be illustrated by comparing them to electrotype manufacturing costs. To attempt an illustration we'll assume that an electrotyper can give 2 hr. service including pickup and delivery if he is properly equipped with multiple equipment and ample staff. Another way to illustrate is that many magazines houses produce plates day after day with a total time of 1½ hr. or less per plate.

• Very good production time for a plastic plate, if the plate is to be made from zinc pattern, is 1 hr. exclusive of pickup and delivery. This allows ½ hr. for the mold and another ½ hr. for plate. If the production time is to be bettered, multiple presses and men would be required. The risk of molding forms in plastics is great—if the form is not properly prepared a good mold cannot be secured.

• The cost of plastics vs. metal is answered best by stating that plastics will have to find their economic level if they are to compete with present metallic materials. If enough use for plastics develops (for making thin-gauge plates) then the cost of the material probably will be cheaper than metal. Before the war, plastic materials were selling for from 60c to 75c per lb. At the present time the cost is around $1.00 per lb.

• Ultimate applications for plastics are dependent upon degree of technological perfection, availability of materials, as well as competitive materials, the economic composition of existent materials and processes, and upon new developments in existing processes.

• At the present time, maximum quality cannot be put into plastic plates. Manufacturers are inhibited from compounding certain materials in their compositions because of WPB restrictions. In one particular instance, the manufacturer knows exactly what to put into his thermoplastic material after the critical materials have been released by WPB.

• Because of restrictions on the use of certain critical ingredients in a thermoplastic plate at the present time, it seems that an average run of not over 40,000 impressions may be secured. The length of run will probably be increased considerably when the necessary ingredients are again available.

• At the moment, WPB restrictions are halting the manufacture of equipment for making plates.

• Type forms in the job and commercial industry from which thermosetting molds are made must be more carefully prepared than for electrotype molding. Half-tone and other plates must be mounted on metal bases. Type must be solid with high spacing material and proper bearers must be provided.

• Plates must be made over if defects exist. They cannot be patched, nor can defective letters be repaired in the plate.

• Use of plastic plates for magazine printing from curved plates is not too hopeful.

• The successful use of plastics for photo-engraving etching purposes is not feasible at the present time. Lack of development indicates little possibility of plastic applications for gravure plate making.

by the International Photo-Engraver's Union. Mr. Mertle summarizes this situation as follows: "The successful use of plastics for etching purposes in photo-engraving is not feasible at the present time, and with the materials now available." Since the principal reason for the study of this subject has been one of substitution of critical metals with plastics, it would seem that there is little likelihood of further interest when zinc and copper are once again plentiful. These metals are less expensive than equivalent volumes of most plastics and unless a decided savings in manufacturing costs or improvement in quality can be effected, there is no reason to anticipate the use of plastics in the photo-engraving field.

No Application for Gravure

Gravure plates are prepared by etching and through processes similar to photo-engravings. Thus any developments in photo-engraving applications of plastics would probably be capable of conversion to gravure plate making. Similarly, the lack of such developments indicates little possibility of plastic applications for gravure plate making.

Plastic sheets of various kinds can be cut and tooled for use as tint materials, or actually for characters or designs such as is now cone in making wood cuts. The sheets are mounted on suitable bases for printing heights and this type of plate offers an inexpensive material that should find increased use in letterpress printing.

Plastic Plate Idea Not New

The idea of duplicate plastic printing plates is certainly not new. The "Duraplate" (Bakelite composition) was patented in June 1914. A sales volume of nearly $750,000 was attained before their manufacture was discontinued. More recent plastic plate developments have been produced under various trade names. One of these is the Wilsolite plate process. One of the recent plastic plates is that produced by Theodore Moss Co., Brooklyn, under the name Mosstypes. The Cebotype plastic plate has been on the market for several years. A cellulose aceate plate material (Tenite) has been sponsored by the Tennessee Chemical Co., and others are being experimentally tested by Monsanto Chemical Co.

At present a satisfactory method of manufacturing duplicate printing plates in plastics is that developed by the Bakelite Corporation. It consists of making a matrix in a thermosetting plastic (Bakelite) and then molding a thermoplastic material (Vinylite) in this matrix to a predetermined plate thickness. This process is the one being used by the Government Printing Office and for the greater part of the volume of commercially made plastic duplicate plates.

Some Observations on Utility

The principal obstacles at present to a greater use are the lack of equipment for manufacturing such plates, the unsatisfactory printing life of the plates, inability to repair damaged or defective plates, necessity for an electrotype pattern (or metal photo-engraving or very accurately prepared type form with metal mounted illustrations) and the tendency to distortion or fracture during press runs. Some of these defects are due to war restrictions that prevent compounding the plate material so that it will have a longer press life and be easier to mold. The necessity for a suitably prepared original, or type form, or electrotype pattern will definitely hamper the general introduction of plastic duplicate plates for job and commercial printing.

The most probable field for this type of plate will be for printing books, where some control over the preparation of the type forms is possible by the plate maker.

If the plate material can be improved with regard to press life and ruggedness, the box and carton printing field will also present a decided possible application.

Ad plates, dealer cuts and mat patterns (providing cold molding or rolling is used) can be satisfactorily made in plastics.

The use of plastic plates for magazine printing, especially from curved plates, is not too hopeful. It is doubtful if a plastic material can be prepared that will be sufficiently rigid to hold the printing curve, yet not brittle and at the same time possess a long press life. The complications of compounding such a

material that would also be suitable for molding are very great.

Economic Situation

It must also be remembered that electrotypes can be prepared quickly and at a relatively low cost and unless plastic plates can decidedly better this economic situation, there is little reason for using them. It will not be enough to equal electrotype prices, service, and quality, because the ability to repair and revise an electrotype will be the deciding factor.

Finally, the average direct mail and job letterpress printing field, where one or two sets of electrotypes are now ordered as an average, will not find plastic printing plates advantageous to use. The proper preparation of material, or the alternative of purchasing an electrotype pattern, will make the cost of the plastic plates at least as much as electrotypes and will require about the same or greater time for manufacture.

Plastic Molding for Electrotypes[1]

Electrotype molds are now being made in a plastic sheet (Vinylite). The plastic sheet is heated to the desired plasticity, a mold is made in the usual manner, and the plastic is hardened (by cooling) while in contact with the form or pattern. The face of the plastic is made electrically conductive by applying a film of silver (in the order of 0.00001 in. thick) and the mold is then suspended in the regular nickel or copper electrotype solutions. Following the deposition of a shell on this silvered surface, the shell is removed, backed up with electrotype metal and the resultant plate is finished by the customary electrotype procedures.

There are several distinct advantages to plastic molding that deserve consideration from electrotypers and users of electrotypes:

1. The use of plastic molds makes possible the elimination of wax molding and graphiting operations —which is desirable.

2. Type forms, originals, and patterns, may be returned to the buyer's plant without wax or graphite, thus facilitating distribution and eliminating cleaning.

3. Less pressure is required for plastic molding and thus less likelihood of damage to forms, originals, etc., is present. Because of the lower pressures and low temperature of molding, it is possible to obtain excellent molds of type forms containing wood-mounted plates.

4. The molds are durable and will stand handling, shipping, filing, etc., with much less possibility of damage.

5. The molds are not destroyed or damaged in removing the electrotype shell. Thus, successive shells may be made upon resilvering the surface, or the mold may be filed.

6. The molds may be softened and used again as a molding material on other jobs.

7. The technique of plastic molding is capable of great accuracy.

To each individual electrotyper is given the opportunity of using his ingenuity to make the most use of these advantages for the benefit of his own type of customers and class of work.

Plastic electrotype molds have now been made for a continuous period of over six months at Capital City Printing Plate Co. of Des Moines. This process is a development of Printing Plates Research, Inc. at Battelle Memorial Institute. Improvements are being made every month and there is every indication to expect a thoroughly practicable technique for manufacturing these plastic molds that can be applied in all types of electrotype foundries. Like all new processes, it has required some time, sweat and expense to smooth out the production procedure. To date the process is dependable as those now being used in the electrotyping industry.

Plastic molding will be used generously in electrotype manufacture when the necessary equipment items become available.

[1] *See Electrotyping Without Wax, Graphite or Impression Lead*, by R. M. Schaffert and Bruce W. Gonzer, August 1943 issue of *Printing Equipment Engineer*.

EXECUTIVE ¶s

E. A. Green has been named general assistant to the manager of General Electric's motor division, according to an announcement by W. H. Henry, manager of the motor division. Mr. Green was graduated from Swarthmore College in 1924, and in August of that year he joined General Electric at Schenectady.

The Chicago office of the Chemical Color & Supply Company, Division of General Printing Ink Corporation, announces the appointment of Mustoe Given as manager of its Specialties Department to take care of accounts in the middle West.

Walter B. Patterson, Linotype's director of agencies, and Reginald Orcutt, Linotype vice president for overseas, were featured speakers at the January 13 meeting of the New Haven Club of Printing House Craftsmen. Mr. Patterson spoke on conditions in the graphic arts on this side of the Atlantic, and then introduced Mr. Orcutt, who related several personal experiences with printers, publishers and others in other parts of the world.

John E. Fick, superintendent of The Steel and Tube Division of The Timken Roller Bearing Company, Canton, Ohio, became vice president in charge of the same division at a meeting of the company's board of directors, December 18, 1943. At the same meeting, E. S. Hoopes, Jr., assistant general superintendent, was appointed general superintendent of The Steel and Tube Division.

George A. Kubler, president of Certified Dry Mat Corporation, died on Sunday, January 9, at the Lenox Hill Hospital, New York, N. Y. after a brief illness. Mr. Kubler was born in Newark, New Jersey, on January 3, 1876. He studied law at the Universities of Munich and Tubingen where he received a degree of Doctor of Jurisprudence. Mr. Kubler founded Certified Dry Mat Corporation in 1924 and was its president from inception of the company to his death. He was also founder and president of the American Sand-Banum Company, Inc. of New York. He traveled extensively, combining business with pleasure and on these trips spent much time in research into all literature available on the art of printing. He was considered an outstanding authority on the history of stereotyping and was the author of five volumes on stereotyping. He is survived by his wife Elsa, resident of Sharon, Conn., and a sister Hermine Hassencamp residing abroad.

Walter G. Hildorf, who recently became Director of Metallurgy of The Timken Roller Bearing Company is the first to occupy that newly created office, according to the Canton, Ohio, firm. Hildorf was formerly Timken's Chief Metallurgical Engineer, a position now held by Ralph L. Wilson.

A. M. Donze, Factory Manager of The Timken Roller Bearing Company, Canton, Ohio, for the past eight years, has become vice president in charge of production. The advancement was made at a meeting of the board of directors held December 18, 1943, and was immediately effective. At the same time, H. M. Richey, assistant factory manager, was promoted to factory manager.

William Roy Ford, educator and fire protection engineer, has resigned from the U. S. Office of Civilian Defense, to become assistant to L. W. Hutchins, Director of Safety Research Institute and President of Sheldon, Morse, Hutchins & Easton, technical advertising and publicity agency.

Gordon R. Neumann, formerly stereotype superintendent of the Kansas City *Drovers' Journal*, is the new Burgess Cellulose representative in the central district. He will represent the company in Michigan and Ohio. His home is in Lorain, Ohio. He succeeds Stanley Morden who has entered the stereotype plate-making field in Detroit.

Harvey Oakes is the new stereotype department superintendent of the Kansas City Drovers' Journal.

Executives Speak in Cleveland—Several of the men shown here spoke in Cleveland in January. At left, J. Homer Winkler, Secretary-Treasurer of Printing Plates Research, Inc., discussed "Printing Plate Applications for Plastics," before the Cleveland Club of Printing House Craftsmen. (See summary of his talk starting on page 13) Second from left is Philip S. Schneider, Assistant Director, Printing and Publishing Div. of WPB, Washington, D. C., who spoke before the annual meeting of the Cleveland Typothetae, on the subject of "The Paper Situation." (See summary of his address this page.) Third from left is Lawrence Hanson, Director, Government Relations, United Typothetae of America, Washington, D. C., who spoke on "Government Relations." Fourth from left is Harold Hill, President of the Cleveland Typothetae, who presided at the meeting. At extreme right is Leon A. Link, Newspaper Specialist, Printing and Publishing Division, WPB. Not available at the time this picture was taken, is G. L. Erikson, Chief, Printing Ink Unit, Chemicals Bureau, WPB.

Paper Situation explained by

Philip S. Schneider, Assistant Director of WPB's Printing and Publishing Division — Immediate relief not in sight

By STAFF WRITER

IN discussing the national paper situation, it was not an encouraging picture from the standpoint of this land of plenty which Assistant Director Philip S. Schneider of WPB's Printing and Publishing Division presented to Graphic Arts executives at the annual meeting of the Cleveland Typothetae in January.

Mr. Schneider stated he would discuss the paper situation as it appeared to the Printing and Publishing Division. Fibrous raw materials have been decreasing. Consumption by the pulp and paper industry of fibrous raw materials has been in excess of new supplies. This has resulted in a drain upon inventories. At the end of November 1943, pulpwood stocks were 22% below a year previous, while wood pulp inventories were down 49%, and waste paper was off 58%. Current inventory levels are critically low, particularly in view of the many uncertain factors relative to future new supplies. Current estimates indicate that consumption will exceed new supply by more than 800,000 cords for the first quarter.

Monthly Average Production Down 2.3%

The minimum expected monthly average production of 1,398,837 tons of paper and board during the first quarter of 1944 is 2.3% below the output level in 1943's third quarter.

Mr. Schneider explained that substantial cuts have been made in printing papers, fine papers, and certain other classes, while increases are allowed for special industrial papers, container boards, building papers, tube stock, and a few other grades. This production pattern, said he, was determined from statements of requirements by claimant agencies, coupled with mill reports of proposed consumption of pulp in terms of major end-use categories. The claimant agencies get their allotments first and the remaining quantity is allocated to civilian use.

Production schedules for the first quarter allow for a ratio of 53% paperboard and 47% paper, compared with 45% board and 55% paper in the fourth quarter of 1942.

Further Conservation Measures

Mr. Schneider referred to Pulp and Paper's Industry report, in which it is explained that in order to insure paper and paperboard being utilized for the most essential purposes, supplemental limitation orders on consumption will be issued as required. Since the primary problem of the industry continues to be shortages in fibrous raw materials, strenuous efforts must be continued to stimulate pulpwood cutting and waste paper salvage and collection.

With respect to raw materials, Mr. Schneider said the Forest Products Bureau of WPB has stated there appears to be little likelihood that mills will receive as much pulpwood in 1944 as they received in 1943, except in the South. With pulpwood inventories down to 2,807,000 cords at the end of November 1943, it appears that by the end of March 1944 stocks will drop to about 2,000,000 cords, which would be more than 300,000 cords below June 1943 when the lowest point in many years was recorded. In the first quarter of 1942 consumption exceeded receipts by 1%; in the first quarter of 1943 consumption exceeded receipts by 9%; while for the first quarter of 1944 a possible consumption over receipts of 25% is indicated.

U. S. Pulpwood Inventories Decline

The overall pulpwood inventories at United States mills declined from 3,616,-

Keeping in Touch

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • FEBRUARY, 1944

536 LITHOGRAPHERS PLANNED NEW IPI OFFSET COLOR GUIDE

Press Problems Minimized By New Improved Offset Inks

The recently announced IPI Offset Color Guide, introducing a new, improved line of IPI lithographic inks, was planned in accordance with suggestions made by 536 lithographers.

The first step in the preparation of the guide was the mailing of a questionnaire to hundreds of lithographers in all parts of the country. The 536 lithographers who replied said that they had two major uses for an offset color guide: to specify colors to the pressroom and to enable customers to select colors accurately. They voted for a letter-file-size guide showing each color on enamel, offset and bond stock. They asked for special sections devoted to offset four-color process inks and to the characteristics of the colors. They asked for a guide which, above all else, would be a practical, useful tool to help them in their business. The IPI Offset Color Guide, now ready for distribution, meets these requirements exactly!

Inks Based on Research Into Lithographic Process

The inks shown in this guide are manufactured expressly for the lithographic process. In formulation, manufacture and control, they represent a new conception in offset inks. They are more than an improvement over previous offset inks—they are entirely new, based upon a painstaking investigation made by the Research Laboratories of Interchemical Corporation into the fundamental character of the lithographic process.

Write today for your free copy of the new IPI Offset Color Guide!

Harris offset press on which IPI inks are given commercial testing.

Each color is a finished, aged ink ready to run on the press; it is only necessary to add drier and, in some instances, soften the ink slightly to suit a special stock.

Pre-Testing Insures Quality

The new IPI offset inks are the first offset inks to be marketed which are pre-tested by controlled methods for their lithographic qualities. The result of this pre-testing is that problems such as greasing, emulsification, stripping, scumming, following the fountain, bleeding and drying have been reduced to a minimum. Be sure to try these *new* inks—we think you will agree that they represent a great step forward in the technique of offset ink manufacture!

The IPI Offset Color Guide was printed under normal pressroom conditions. No special plates were employed, and the amount of ink carried is comparable to that employed on the average job under similar pressroom conditions. Every IPI branch carries every ink shown in the Color Guide. Special colors not shown in the Guide can be matched at IPI service stations conveniently located throughout the country.

Send for the Guide Today!

The new IPI Offset Color Guide, which every lithographic concern should have, is yours for the asking. A large number of requests for it have already been received and are being filled as promptly as possible. Make sure to get your FREE copy at the earliest possible date by sending in your request today. Write to International Printing Ink, Empire State Building, 350 Fifth Avenue, New York 1, N. Y.

Should Be Published in Book Form

"I read the stories about Joe Bloe from month to month and get a great kick out of them. Just recently, while trying to fight off a cold I re-read the whole lot at one time. At this time, I enjoyed Joe more than I did the first time I read each installment.

"The author has done a great job and should be highly complimented. When the series is finished they should be published in book form.

"I clipped the issues published so far and have put them in a folder so I can have the whole story complete."

Francis Britton,
Production Manager,
Nashua (N.H.) *Telegraph*

From a business counselor: "Everything in the Joe Bloe series happens in the light of human experience."

From a photo-engraving foreman: "For a while it seemed as though you had been talking to my wife."

From an industrial engineer: "Every master mechanic is a Joe Bloe."

000 cords at the end of November 1942 to 2,907,000 cords at the end of the same month in 1943. Overall receipts showed some improvement, with November 1943 receipts at 1,205,000 cords as against November 1942 receipts of 1,076,000 cords. But receipts for the 11-month period of 1943 were still 14% below the like period in 1942.

Consumption during November increased very little over November 1942, comparative figures being respectively 1,280,000 and 1,278,000 cords. Comparative consumption for the 11-month periods, however, showed a decrease in 1943 of about 10% under 1942.

Canadian Picture Discouraging

The pulpwood picture secured from Canada is discouraging. It is reported that in 1944 Canada plans to supply 1,250,000 cords of pulpwood east of the Rockies, this being 19% less than the 1,550,000 cords which Canada agreed to supply in 1943. During the first 11 months of 1943, United States receipts of pulpwood from Eastern Canada totaled 1,445,482 cords, or about 93% of the anticipated year's total.

In the South, kraft production may be increased. Labor is plentiful. Logs can be used the same day after cutting. In the North, however, labor is scarce and a full year is required before a log is suitable for use. Help cannot be secured immediately. Even if labor were available, from 6 to 9 months would be required before the pulp wood situation would show relief.

In detailing the anticipated production of various kinds of papers for the first quarter of 1944, Mr. Schneider stated that the production of book papers is down 13%; fine papers are down 10.5%; newsprint is down 10%; groundwood is down 7.5%. Special types of papers, however, are up 36%.

Wood pulp production for November 1943 was 784,000 short tons, a decrease of about 2% from October. On an 11-month basis, production was 8% below 1942 for the same period. Consumption for an 11-month period shows that there has been a 3% decline from 1942 for the same period. The critical situation exists in inventories, where figures show that the inventory position for November is 49% below November of last year, and 7% below October. At the rate consumption is going we will have no inventory of cordwood by July 1.

Partial Help in Dilemma

The only way out of this dilemma (and it is only a partial help) is acceleration of the waste paper collection plan. For this purpose, 550,000 tons per month are needed. This waste paper is primarily used in the roofing and board industries. In order to give some idea about volume, Mr. Schneider stated a million V-boxes are used per month. These, however, cannot be recovered for salvage.

England's 68% Salvage

He stated that in England 68% of all paper used in the British Isles is recovered through salvage. In the United States an attempt will be made to recover 58% of paper of all kinds.

There will be a continued demand for stock for containers unless this demand can be met through waste paper collections.

Receipts for waste paper at U. S. paper and paper-board mills in November 1943 were 509,724 tons, or about 17% above November 1942, and about 1% above October 1943.

Mr. Schneider mentioned specifically Paper Limitation Order L-120, through which fancy weights and grades have been eliminated. The net result is that 25% more yards of paper are being secured. It may be that the effect of this order will cause paper production to come down to subsistence levels for mills and the printing industry.

Different Paper Order Responses

In complying with Magazine Print Paper Order L-244, the speaker complimented the industry as having done an outstanding conservation job. Under Book Order L-245, the book industry likewise has done a fine job. In 1943, while fully complying with the order, the industry produced 50 million more books than in 1942. In the newspaper publishing industry, it is probable that considerable use of lighter weight paper will be made together with the use of substitute waste fibre. The commercial printing industry with respect to paper consumption is a difficult problem. The industry must take a 3½ day pulp supply and stretch it to 5 days. Downgrading of sheets is being done to the best of the manufacturers' abilities, 75% long fibre offset sheets may be the reason why these papers don't print so good.

Manpower Is Main Problem

The paper situation, concluded the speaker, is none too good. The main problem is that of manpower. Even if 18,000 men were to be put in the woods immediately, no relief would be gotten in less than 6 to 9 months. While it has been proposed to utilize war prisoners in wood-cutting operations, their use constitutes a serious problem. A similar problem in their use is to secure millions of dollars to build prisoner camps in the wood-cutting area.

Domestic wood-cutting has declined, but is now showing a spurt. However, no relief in domestic wood-cutting will be experienced for the balance of the year.

The paper dealer now tells you about the kind of paper he has in stock—and you will take the kind of paper he can furnish. This situation has been brought about by allocation limits imposed upon the mills.

He asked the printing industry to reduce its paper consumption to the most economical level by trying to sell each job in such a way as to use less weight in paper.

Hanson Summary

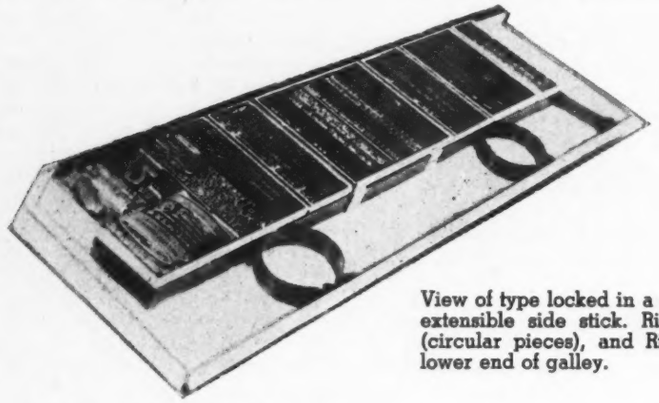
LAWRENCE HANSON, Director, Government Relations, United Typothetae of America, followed Mr. Schneider on the speaking program. In referring to Commercial Print Paper Order L-241, he said: "Try to get more than 65% of the 75% of paper allowed under the order. If you do, let us know so we can pass it around."

In speaking of the printer who gets more paper than is allowed under L-241, he said that printer is not taking it away from the War Production Board, but is taking it from other printers. He asserted that printers are not yet out of priority danger in the use of papers.

In suggesting ways and means for paper conservation, he stated that printers control 90% of all paper used and should persuade customers to use smaller sizes for jobs made up from lighter weight papers and to suggest ways and means for conservation by the customer.

He analyzed the benefits of cooperative action by the various groups seeking to accomplish beneficial aims for the printing industry. The various committees must be unified to attain objectives. A unified group representing all industry could fight the problems of the industry. Specifically, in discussing activities for the UTA, he mentioned that 1945 will be one of the worst years with respect to manpower. He spoke of the veterans' rehabilitation program for which Congress has appropriated $125,000,000. He estimated that the printing industry could train and employ veterans through a training program, to relieve an estimated shortage of 60,000 employees.

Equipment and Supplies . . .



View of type locked in a galley with Riehl extensible side stick. Riehl galley locks (circular pieces), and Riehl end lock at lower end of galley.

Adjustable Galley Side Stick

THE Riehl Galley Lock Company has announced an adjustable side stick which serves as a support of lock for type matter in a galley. The adjustable side stick is constructed of two thin pieces of tempered steel. The pieces telescope or slide in two supporting members. They are made in two sizes. The 7 in. length can be drawn out to 13 in., and the 12 in. length can be drawn out to 22 in. A right-angle bend at the extremity of each of the slidable side sticks hooks over the head and foot of the type matter which the stick supports when in a galley.

In the accompanying illustration, the thin steel extendable side stick is shown supporting the type matter in the galley. The two circular spring steel pieces bearing against the side stick and side wall of the galley are called side locks. At the lower end of the galley may be seen the Riehl galley end lock, which also is made of spring steel.

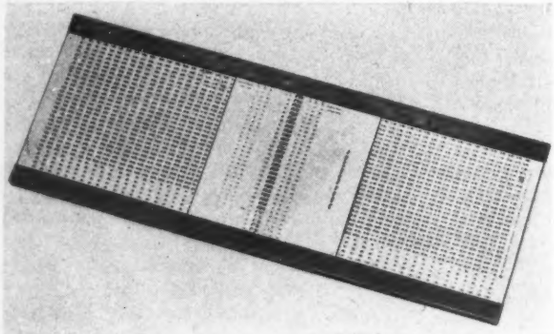
If you would like to have further information about these three locking devices for safe handling of type in galleys or in galley storage, *Printing Equipment Engineer* will be glad to see that you get it.

Improved Payroll Calculator

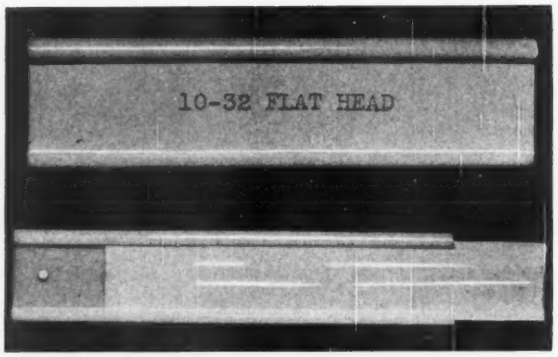
OVERTIME, as well as straight time payroll calculations, can be figured with an improved model payroll calculator now being manufactured by the Berger-Brickner Company.

Forty hours plus overtime are calculated in one operation on one side of the device for firms that require total pay check only. The reverse side is used for figuring straight time and overtime as separate items.

All hourly rates of pay from $.40 to $1.74 with a half cent spread between rates; and time periods up to 80 hours with divisions of tenths and quarters of an hour are covered by the new model calculator. This new Berger-Brickner payroll computer is made of tempered masonite and lacquered wood.



View of Berger-Brickner payroll calculator. Payroll amounts can be calculated quickly with this instrument.



Hollywood plastic stock label for identifying materials in cabinet drawers or in compartments.

Stock Label Holders

FOR labeling stock drawers and shelves, the Plastic Division of Hollywood Athletic Company has available label holders in a variety of shapes and sizes. These are made of ivory color plastic. Standard sizes of 5/8 in., 7/8 in. and 1 7/16 in. are furnished in lengths of 3 in., 4 in. or 5 in.

The label holders are applicable to any flat surface. Holes are provided for nails when the labels are to be fastened to wood. If they are to be fastened to metal, glue may be used for attaching purposes.

A slide card upon which the description of the article may be typed together with a transparent plastic covering is slid into the holder itself. Manufacturer states the material is practically soilproof and is washable.

If you are interested in obtaining a descriptional folder, *Printing Equipment Engineer* will be glad to pass along your request.

Curved-Finger Compar Gloves

A DUAL-PURPOSE transparent glove with curved fingers to facilitate gripping is now being manufactured by Resistoflex Corporation. Made of compar, a vinyl resin derivitive, it is claimed, the glove offers protection from industrial dermatitis and folliculitis caused by skin surfaces coming in contact with fuels, oils and other organic solvents, paints, lacquers, thinners, dry cleaning and degreasing solvents, sulphur-base cutting oils, etc. Where varsol or kerosene are used Resistoflex gloves offer a high degree of safety, states manufacturer.

The curved fingers of the glove permit freedom of hand movement and, according to safety engineers, its transparency makes it seem lighter, less confining and more comfortable. Besides being impervious to organic solvents and such inorganic solvents as carbon disulphide as well as many industrial, refrigerant and military gases, the gloves are highly abrasion and tear resistant, it is also claimed by manufacturer. They are available in four sizes and three lengths.

Valor Halftone Black

VALOR Haltone Black is name of a printing ink announced by Sigmund Ullman Co., Div. of General Printing Ink Corporation. Company announces this product complies with WPB restrictions. It is stated in a four page illustrated bulletin that "While it develops a very good rub-resisting surface when dry and can be backed up in four hours, it will not dry on the press during normal makeready operations. A similar ink, called Imperial Halftone Black, is furnished in a softer body for lower grades of paper with more tender surfaces.

Wool-Tex alternative sponge is made from long fibre woolen cloth in the shape of a pillow.

Wool-Tex Alternative Sponge

WOOL-TEX Sponge Company announces the Wool-Tex sponge for use wherever a sponge is needed. This is a substitute for the natural sponge, is made from woolen cloth in the shape of a small pillow. The cloth contains long fibres. Manufacturer states Wool-Tex sponges absorb water quickly, are soft when wet or dry, are easily cleaned and dry quickly, and fit snugly into the palm of the hand.

Size of the sponge is approx. 4½ in. by 5½ in. If you are interested in further information please direct your inquiry to *Printing Equipment Engineer*.

Post-War Priority Press Delivery

AMERICAN Type Founders is now receiving applications for priority delivery of ATF printing presses. A blank for that purpose to be filled out and mailed to the main office in Elizabeth, N. J., by the intending purchaser, is enclosed with the January issue of *ATF Printing Profit Aids*.

When filled out the blank constitutes the printer's application for an ATF Civilian Priority Delivery Assignment for one or more presses when available after the war.

Upon receipt by ATF, the application will be stamped with the hour and date of arrival and a priority delivery number will be issued for each individual press.

Next, an ATF representative will call on the applicant with an ATF Civilian Priority Delivery Assignment Agreement for execution. A deposit of $100 for each individual press is wanted to be paid at the time the agreement is executed.

The third step consists of issuing the Certificate by ATF at the main office after receipt of the intending purchaser's application with deposit. This Certificate bears the number of the order in which the application was received.

Details of the purchase plan include advance information regarding purchase price of the press, trade-in allowances (if any) and terms of payment in effect at the time. This information will be furnished not less than 60 days in advance of the expected delivery date.

Included in the plan is a stipulation that if an agreement on price and terms cannot be reached, the $100 deposit will be returned and the Certificate will be cancelled.

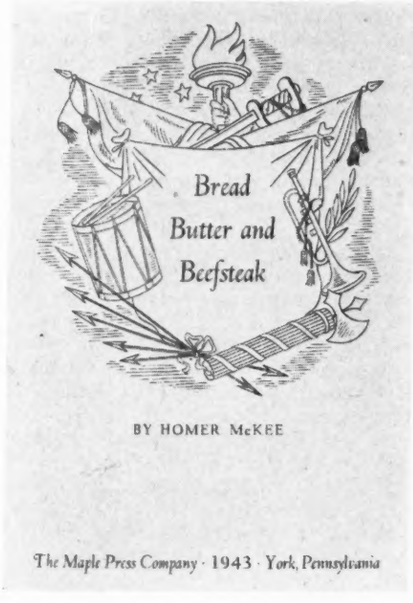
Purchases Linograph Property and Assets

Intertype Corporation announces it has purchased certain personal property and assets of the Linograph Co., of Davenport, Iowa. The assets purchased are those used in connection with the line-casting machine business of the Linograph Co., and consist of the trade-name, good will, patents, trade marks, inventories, matrix machinery, jigs and fixtures and accounts receivable.

Now Champion Agent

H. E. Gould, President of Reinhold-Gould, Inc., announces the appointment of his company as New York metropolitan merchants for The Champion Paper And Fibre Company. Regular deliveries will be made to the entire metropolitan area as well as Westchester, Connecticut, Long Island, and New York state as far as Peekskill. Reinhold-Gould also offers the services of its organization to render counsel on the selection of papers for every printing need.

Keepsake Book Simply but Attractively Designed



Miniature reproduction of title page of keepsake book published by The Maple Press, York, Pa. Howard N. King designed and supervised production of the book. Decorations by Guy Fry. The ornamentation on this title page was printed in brown and the type appears in black ink. Both inks are dull on a dull 7 in. by 10¼ in. sheet which gives the whole page a peculiarly soft and pleasing appearance.

THIS year's Maple Press Company's 32 page keepsake book is entitled *Bread, Butter and Beefsteak* by Homer McKee. The edition was limited to 700 copies. The book is bound in light blue paper covered boards with white backbone. While the text of the book is important, readers of *Printing Equipment Engineer* will be interested in its production. The book was designed by and produced under the direction of Howard N. King, director of typography for The Maple Press and also typographic consultant for Intertype Corporation.

Bread, Butter and Beefsteak is set in 14 pt. Deepdene, leaded 4 pts. Decorations were by Guy Fry. The book was printed on Lineweave Early American Gray and the cover in same brand of paper but in blue. The blue was also used for the slip case. Printing is by letterpress in three colors. Binding was done by the National Pub. Co. of Philadelphia. It appears likely that the 1944 book will receive many more compliments from recipients than the 1943 edition, F.D.R.'s *Pathway to Peace*.

Mr. Mechanical Executive—If you want help, want another position, or make a personal want known, take advantage of P-Double-E's gratis Employment and Service Department. Six lines, one time, no charge.

Time Magazine's California Edition

TO overcome the railroad transportation problem between Chicago and California, and to furnish California readers with the same news as is furnished *Time* readers in other parts of the country, *Time* commenced printing its January 31 California edition (130,000 copies weekly) in the plant of the Ad-craft Company, Los Angeles.

In order to provide late news, cellophane transparencies of the news pages will be made as soon as the type has been set in Chicago. Two sets of the transparencies are flown to California over different routes, and a third set is sent via the Super Chief for use in an emergency.

The printing will be done by offset-lith on two roll-fed presses. Ink drying is accelerated by passing the paper web through an infra-red ray device.

Time reports that "in a day when no new presses can be built we could not have started this venture if we had not located our second press 2000 miles away in Detroit—and if our printers had not obtained WPB permission to move the press and other equipment to the Coast by pointing out the transcontinental transportation *Time's* California edition would save."

Letterpress's Future is in Hands of Photo-Engraver

So says Russell Hogan, Superintendent of the Wickersham Press, New York, before January meeting of New York Craftsmen's Club

By ADAM HENRI REISER

FURTHER progress in the letterpress process was tied up with photo-engraving by Russell B. Hogan, superintendent of New York's Wickersham Press before the January meeting of the New York Craftsmen's Club. Platemaking needs and the troubles confronting the pressman were presented, traced to the engraver and a finger put on their origin. Voluble evidence in support of the speaker came in audience reaction in the discussion that followed the talk.

After discussing the inroads on letterpress made by gravure and offset-lith, Mr. Hogan stated it as his belief that the success or failure of letterpress is largely dependent upon future developments in photo-engraving. Hitherto, the entire letterpress industry sat back expecting the press manufacturer to develop the process through refinement and perfection of his machine. Hogan feels that while the press builder has done an admirable job, this would not suffice. Encroachment upon the field of printing by the two newer competitive methods dictated not only the acceptance of parallel production methods but also mandated the introduction of some of their own improvements in platemaking.

Placing the problem of letterpress competition squarely before the photo-engraver, the speaker tied up the progress of offset-lith with the introduction of the offset press to lithography and the advent of the Lithographic Technical Foundation with its program of research. He contrasted abandonment of the photo-engraver's research attempt with the Lithographic Technical Foundation's present campaign to broaden the scope of research in offset-lith.

Five Avenues of Improvement Suggested

Here are some constructive suggestions offered by Mr. Hogan:

A. Copy preparation;art work, etc.
B. Selling and order taking.
C. Planning and laying out work.
D. Mechanical and method of improvement.
E. Proving press and methods improvements.

(A) It was felt that art work should be prepared to meet production conditions in the industry. Greater use of photostats and more intelligent retouching of photographs was also advocated. All these may seem to be minor innovations yet they are conducive to the reduction of re-etching time.

(B) Attention was called to the need for a more detailed knowledge of the methods of production by the salesman, so that he may give an intelligent appraisal of copy requirements, of time schedules, of ability to match the copy, of the liklihood of matching copies of different color and design when they are run together, and many other things.

(C) There is a definite need for the person in charge of planning engraving production to have all possible information that may have any application or bearing on its production and use. Paper and press definitely must be considered in the choice of screen ruling used in shooting a job. Should wet or dry proving be used? Certainly the paper for the job to be run is the paper to be used in proving the job.

(D) Suggestions in mechanical improvements. Mr. Hogan contends the photo-engraver could cheapen the cost of his production and lower his subsequent sales price by employing the photographic developments which seem to have been pioneered by gravure and offset-lith. Why the hesitancy to accept innovations? Eleven point engravings should be a post-war product. In the past the engraver has been reluctant to supply these plates. Wood-backed plates, 40 to 50 points high, introduced a possibility of smashed plates when proved. Among other things, delivering plates under type high would certainly be recommended in preference to those over type high. Defective plates should never be sent to the electrotyper. Shoulders should be routed off, especially when the plates are intended for multi-color presses. The backs of plates should be cleaned of shellac and varnish to reduce press time loss. Any unevenness caused by particles of heavy coatings of these substances on the back of plates will inevitably show in the print during a long run. Under-etched and over-etched plates make for trouble in the foundry and pressroom. Under-etched plates may be correctly traced to camera operations or they may be laid to a poor iron solution if etched on copper. Extreme highlight dots lose their surface in an over-etched plate, giving the plate the same general effect as an under-etched plate. Burnished plates, too, present their problems with the mushroom dot. Over-etched plates may also be caused by excessive changes demanded by the art editor or client before he passes the proof. Negatives could easily be ganged up or a step-and-repeat plate made for a multiple engraving, yet even in New York there are only a few places where the printer may obtain them.

(E) The proving department is the weakest link of the entire engraving-letterpress chain. It is desirable that all provers spend time in a pressroom so as to familiarize themselves with pressroom procedure and problems. Wet printing problems have never been completely solved. When semi-wet proofs are pulled on single color presses (½ hr. apart) they cannot be matched on power presses. This results in a sharpness in the over-printed areas, that cannot be matched. Use of a $5 hand-press black, or the use of toners, or softening up of vignette edges by wiping or bearing off, or the use of some fancy stock to show off the engravings, should be avoided. Trapping brings about a tremendous difference between the proof and presswork in wet printing. While the present four-color proof presses have helped considerably, the entire solution is still to come. An improved proof press will be a post-war possibility. A specific job illustrated the need for closer cooperation between the engraver and the press department. The plates for this job were supplied by an agency with the admonition that the proofs had to be matched. Running one subject behind the other, with one requiring a 35% greater ink coverage than the other, negated the admonitions. The volume of ink on the two progressives varied 20%. After three sheets had been submitted to the client, one sheet matching the lighter progressive, the other the darker, and the third a compromise between the two progressives, the client accepted one, even though it failed to match the proofs. He accepted this only because he understood pressroom conditions. The installation of a color control system on the proof press would have made possible uniform inking of proofs to enable close matching of both progressives. A trapping control system on the bed of the proof press would indicate proper trapping. Ink becomes tacky when the prover has to stop for corrections. Starting to prove again with tacky ink produces proofs that are hard to match in the pressroom because the inks have not trapped.

A lively discussion followed the talk. In defense of their art, some photo-engraver's content that evolution of gravure and offset-litho could not be stopped by anything the engraver does. Agreeing to this observation, Mr. Hogan declared that he wasn't attempting to hinder the competing processes but rather, he wanted to perk up letterpress. Then the latter could give the other processes a hell of a run for their money.

The situation is something like that in which a woman heard a noise in her back yard, saw something moving there and emptied both barrels of her shot gun at it. The following morning she saw it was her husband's best suit. But he wasn't sorry. He was overjoyed because he escaped with his life. Why? Well, if it would have been Sunday, he would have been in the suit. Let's stop thinking of being licked. Let's devote all our energies to solving our problem and one way of doing that is to talk them through and improve our methods.

WANTED WANTED WANTED

$1,500,000 worth of

MODERN OFFSET & ENGRAVERS PLATE MAKING EQUIPMENT · FOR CASH · COMPLETE PLANTS OR ANY PART

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If some of your equipment is not being used it is your patriotic duty to sell it where it can be put to productive use.

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As an authorized used machinery dealer we can purchase your equipment without any approval or priority. We comply with all OPA and WPB rules and regulations.

We have one of the largest inventory of used plate making equipment in the country. Your inquiry invited.

The TRADING POOL *Equipment List*

WANTED

Photo Composing Machines
Photo Lettering Machines (Power)
Precision Cameras, all sizes
Zenith Graining Machines
Monotype Vertical Whirlers—large size
Horizontal Whirlers—all sizes
Register Layout and Lineup Tables
Harris Single and Multi Color Offset Presses
Offset Proving Equipment
Large Max Levy Square Screens
Circular Screens from 60 to 300 Line
Zeis, Cooke, Goerz Lenses and Prisms
Complete Offset Platemaking Plants
Complete Photo Engraving Plants

TO SELL

Heubener Bleistein Power Proving Press.
Rutherford Proving Press.
Model A Directoplate Photo Composing Machine 36″x48″ with 2 Register Frames.
1—Consolidated Spiral Geared Offset Proving Press. Hand Operated.
1—Lanston Monotype Photo Imposing Register Device and Printing Frame, 24″x26″.
Circular Max Levy Screens:
23½″—100 Line Screen
29 ″—100 Line Screen
29 ″—133 Line Screen
42 ″—133 Line Screen
29 ″—120 Line Screen
36 ″—133 Line Screen
18½″—110 Line Screen
120 Line and 133 Line Screens
Many Small Square Screens.
1—Precision 24″ Step and Repeat Camera.
1—48″x72″ All Power Driven Litho Printex Photo Composing Machine.
1—Hand Operated Rutherford Photo Lettering Machine.
Levy and Wessel Cameras, Gallery and Darkroom, from 17″ to 48″ Size.
1—Fuchs & Lang Hand Fed Bronzing Machine.
1 set Double Deck 45 amp. Pease Camera Lamps.
1 set Macbeth 25 amp. Camera Lamps.
1—Vallette Elevator Type 50″x70″ Vacuum Printing Frame.
1—44″x54″ Valette Whirler.
Many more Items available. Your inquiry invited.

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CONSOLIDATED PHOTO ENGRAVERS EQUIPMENT CO.

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OFFERING FOR IMMEDIATE DELIVERY

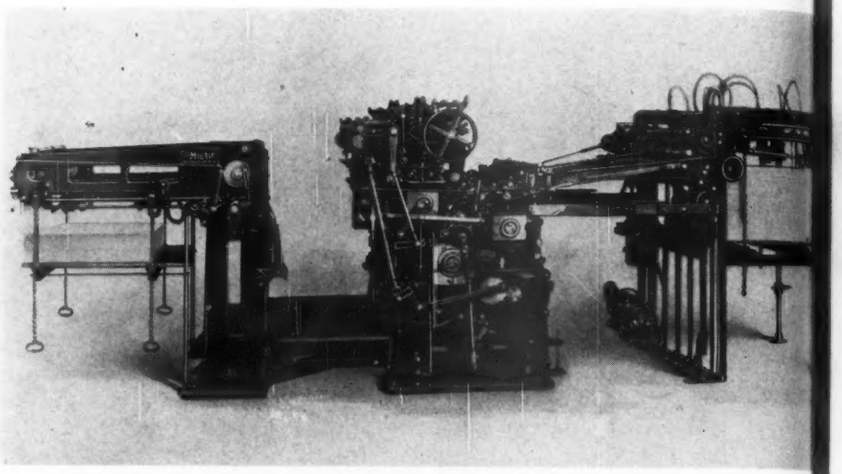
MIEHLE OFFSET PRESSES

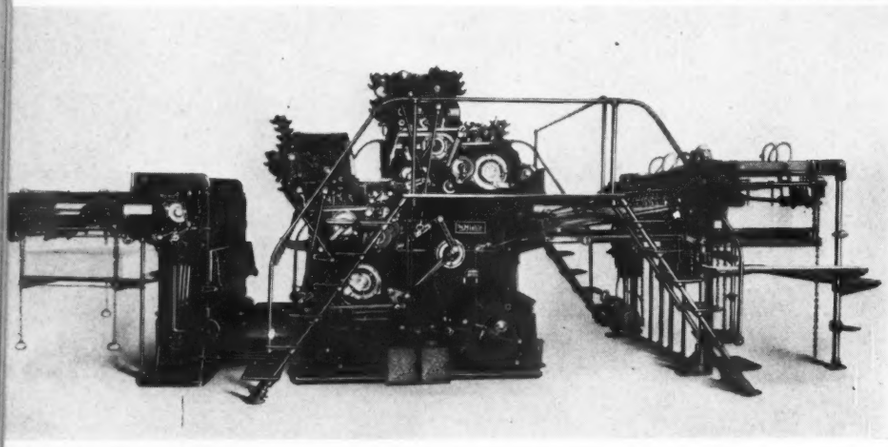
These Two Modern Offset Presses in perfect running order. Now in operation. Offered subject to prior sale. Cost new over $60,000.00. Can be purchased at far below ceiling prices. Actual condition as good as rebuilt and guaranteed presses. Take advantage of this opportunity. Wire, Phone or Write.

HISTORY FROM MIEHLE FILES

No. 65 Offset One Color Press
No. 16032

Original purchase New York Lithographer, delivered January 26, 1927; resold 1941 to a Commercial Lithograph Color House in Milwaukee, Wis. Now running and in operation. Holds register perfectly, having been maintained by experts.





HISTORY FROM MIEHLE FILES

No. 65TC Offset Two Color Press
No. 16704

Original purchaser New York Lithographer, delivered July 3, 1928; resold 1941 to Milwaukee Lithographer. Now producing fine Color Process Work on Art Calendars, Displays, Fine Labels and Multicolor Poster Work for some of the largest National Advertisers.

Both Presses Equipped with Dexter Pile Feed and Extension Delivery. All Motor Equipment New 1941 G.E. 3 Phase 220 V AC with Automatic Magnetic Switch and Control

SPECIFICATIONS

Press No.	Plate		Design	Sheet		Rubber Blanket		Form Roll	Floor Space		
	Size Inches	Max. Thick.	Max.	Max.	Min.	Size Inches	Thick	Dia.	Length	Width	Height
65....	50 x66	.024"	44½"x65"	45" x65"	22"x30"	52 x65½	.0625"	4⅛"	24' 3"	13' 2"	8' 0"
65TC.	50 x66	.024"	44½"x65"	45" x65"	22"x30"	52 x65½	.0625"	4⅛	26' 9"	13' 9"	10' 4"

Press No.	Speed per Hour	Horse Power	Nearest Size Standard Motor	Fly-Wheel Shaft		Press Pulley	Approx. Net Weight	Approx. Boxed Weight
				Revs. per Impression	Max. Revs. per Minute			
65.....	3300 to 3600	7½	7½	10.93⅓	660	16"x6"	15 tons	19 tons
65T.C.....	3300 to 3600	15	15	4.63	278	34"x7"	27 tons	31 tons

COMPLETE PLATE MAKING DEPT. FOR ABOVE PRESSES—1 - 40" Vallette Precision Camera, 50"x70" Vallette Vacuum Printing Frame, 100" Douhitt Whirler, 48"x72" Vallette Register and Layout Table, Double Deck Printing and Camera Lamps, 30" Lenses, 40" Screens, Vertical 48"x72" Motorized Photo Composing Machine, Power Proving Press.

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WPB Order L-241, applying to commercial printing industry discussed for printing executives — Detailed explanations should help effect compliance

By MEIRIC K. DUTTON*

**Chief, Distribution Section, Printing and Publishing Division, War Production Board, Abstract of address delivered before the Graphic Art Club, Charlotte, N. C., January 21, 1944.*

EDITOR'S NOTE:

In his complete Charlotte address, Mr. Dutton discussed all six printing paper orders and their relationship to each other. Because of editorial space limitations, *Printing Equipment Engineer* is printing only that part of Mr. Dutton's address referring to Commercial Printing Paper Order L-241. We are sure printing executives will find his discussion helpful.

THERE are three kinds of quota which may be established by the six printing-paper orders. Two of the orders provide quotas of paper directly to the *printer*. These two are Order L-241, Commercial Printing, and L-294, Displays. The third kind of quota is that which applies against the *person who issues publications* which are listed under Schedule II of Order L-241.

As a first step in understanding these kinds of quota, it is necessary to differentiate between the quota established under the main provisions of Order L-241 and that established under Schedule II.

The quota established under *Schedule II of L-241* is "double-barrelled." It gives the person who issues the publications listed in that schedule the right to use in 1944 seventy-five percent, by weight, of the amount of paper he used in the same items in 1941. However, it gives this right only insofar as a commercial printer will produce the publication out of paper which is also charged against the commercial printer's quota. The person who issues these publications in 1944 is not required to buy his printing from the same printer he used in the base period; nor is his printer of 1941 required to accept a particular customer's publications for printing in 1944. The customer may buy, within the limits of his own quota, from any printer who has a sufficient commercial printing quota, whether or not that printer printed that kind of item in 1944.

The commercial printer's quota under L-241 is based on his base period usage of paper for *all* items covered by L-240, *including* items in Schedule II thereof. He may use this entire quota for any kind of printing covered by L-241 without any relation whatever to the proportion of Schedule II items be produced in 1941. However, any work covered by Schedule II which he does in 1944 must come out of his quota as well as out of his customer's quota.

Aside from this special kind of quota established by Schedule II of Order L-241, you should realize that the quota established belongs only to the person to whom the order is directed—commercial printer, book publisher, display printer or magazine publisher, etc. Even that person may use the particular quota of paper *only* to print or publish for himself the particular type of product (commercial printing, books, displays or magazines, etc.) under which that quota was established.established. Therefore, if you are a printer under Order L-241, you may not include in your base-period figure for Commercial Printing any paper which you used in 1941 to produce items which are defined as included in the four publishers' orders or in the Displays Order even though you may have bought the paper and printed the job. On the other hand, any paper which you printed in 1941 for products defined as Commercial Printing should be included in your base-period figure under L-241 even though your customer supplied the paper to you. The quota belongs to the printer or to the publisher on the basis of the definition of the product and on the basis of the definition of the person controlled, not on the basis of who bought or paid for the paper.

Who Is Restricted and Whose Is The Quota?

Order L-241 applies to all printers, regardless of the particular process of printing used and regardless of whether the printing is done in a private plant or a plant which does work for the trade.

What Restrictions Apply to Customers?

Schedule II of Order L-241 places limits on the amount of paper which a person may *cause* to be consumed in printing certain items of commercial printing. This quota gives the person who issues the kinds of publications listed in Schedule II of L-241 the right to use in 1944 seventy-five percent, by weight of the amount of paper he used in similar publications in 1941. However, it gives this right only insofar as a commercial printer will produce the publication out of paper which is also in the commercial printer's quota. The person who issues these publications in 1944 is not required to buy his printing from the same printer he used in the base period; he may buy from any printer who has a sufficient commercial printing quota. The printer must secure the proper certification from his customer before printing any of these items.

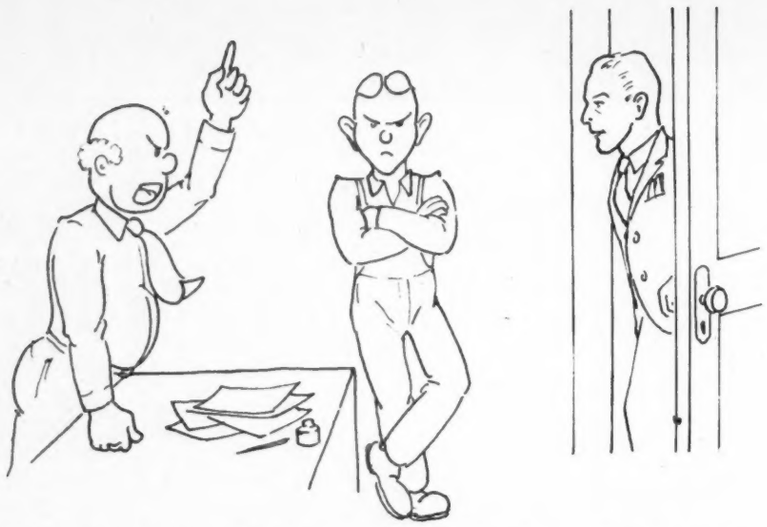
These customer-restricted items are: (1) catalogs (including supplements) of 12 or more bound pages issued by a person who manufactures, distributes or offers for sale the products, commodities or services listed therein; (2) directories (except telephone directories) of 12 or more bound pages issued by a person whose primary business is not publishing; (3) shopping guides, free distribution newspapers, want ad publications and free distribution circulars in newspaper format which are not "newspapers" as defined in Order L-240; and (4) school and college annuals and yearbooks.

By an interpretation issued January 22, 1943, publishers of shopping guides, free distribution newspapers, want ad publications and free distribution circulars in newspaper format may consider these items as being interchangeable. Thus, a publisher who put out a free distribution newspaper in 1941 may change his publication to a want ad publication or a shopping guide in 1944 while using paper from the quota of the original publication. However, the separately-numbered paragraphs of Schedule II are not interchangeable, and a shopping news quota may not be used, for example, in the publication of a catalogue or directory.

What Products Are Restricted?

Order L-241 really is the "residuary legatee" of all the other paper-consuming orders. It restricts the amount of paper permitted for virtually all products generally referred to as "commercial printing"; but it does not cover any newspapers, magazines, books, commercial greeting cards and illustrated post-cards, displays or wallpaper;—all of which are covered under the other orders we are discussing today. Furthermore, the products covered under Orders M-241-a,

(*Continued on Page 46*)



"We were twenty minutes late getting out the run yesterday. . . . Can you give me an explanation in ten words?" said Daub. "I can do it in seven," yelped Joe. "Your two shirt-tail relations had a fight." By this time, the Old Man was standing up, waving a finger at Joe. His mouth was open to roar an ultimatum at Joe when the door opened and in walked Frank Ness Daub.

Joe Bloe—Foreman

By WILLIAM WYATT WARFEL

X

MOM offered to get some lunch for Joe at one o'clock. But, the Lord and Master of the Bloe household had a bellyfull. His stomach was churning, not only because of the overdose of pancakes that morning but because of the revelations of things to come. As he walked to the office he thought of the effects his notebook had on the powers behind the throne. He resolved to intensify his doodles. Why, someday he would make the President of the United States sit up and take notice.

AS Joe stepped into the outer office at one o'clock, Inna Fishen greeted him with a smile and waved him into the inner sanctum. Joe stepped sprightly into the lion's den. He burbled: "Well, Boss, am I behind the eight ball again?"

"What kind of language is that?" griped the Old Man as he looked up from a letter he was reading. "Have you no dignity? How can I make an executive of you if you refuse to act the part? It is just as well I did not send you to the convention. You would surely have disgraced us."

"Boss, you know I was only kidding," apologized Joe as he wiped the smile from his face.

"This is a dignified business office," said the Old Man sternly. "Someday you should learn that a pun is the lowest form of wit. Now, take John Donkey—"

"You take him," spat out Joe. "He—"

"What's that? What's that?" sputtered the Old Man. "Oh, I see what you mean," said the Old Man with a smile. "What you mean is that you like the way he does his job. Is that it?"

"Yeah," said Joe. "You got it. He's all right in his way but he don't weigh much. Grampa was thinking of John Donkey when he said, 'Strain a gnat and swallow a camel.' He's just like a pencil point, shaved down to nothin'."

The Old Man was reading and paid no attention to Joe's last remarks. A beatific smile played across his features as he leafed through the sheets in his hands. Shortly he held up one hand for silence, and said:

"Joe, I have just been reading John Donkey's report of the first two day's sessions of the convention. Our organization has been signally honored. John was made Chairman of the Committee on the Study of Labor Relations of the Post War Era. Some of the committee's conclusions are nothing short of marvelous. Just listen to this:

> " 'Swedish servant girls, when checked on job efficiency, deliver twice the amount of gravy per pound of meat cooked if they are housed in a room trimmed to simulate their homeland surroundings. This proves that sentiment, not logic, is a motivating force in labor relations.' "

The Old Man looked at Joe with a gleam in his eyes. He was squirming around in his seat as though the chair had electrical connections. Joe realized some statement was expected of him, but he was too steamed up to fall into the Old Man's mood.

"Boss," cried Joe with an amazed expression on his homely countenance, "if production and costs are to depend on chasing a bunch of fleeting sentiments around, gawd help the business. Them things might originate in anything from a bad digestion to a frustrated love affair. Are we going to run a Beatrice Barefacts clinic?"

The Old Man's mind was in the clouds, figuratively walking a tightrope high in the sky. Joe's interruption and statement fell on deaf ears. The Old Man held up his hand for silence and read further:

> " 'Research at the Sistern Shocker Company shows that a selected group of people, when properly motivated, will produce twice the amount of work with less fatigue. Attitude tests before, during and after the trial period show that desire for financial return ranked nineteenth on a list of twenty-five desires as expressed in the questions.'

"Joe, do you see what that means?" queried the Old Man excitedly as he popped out of his chair and walked the floor waving his arms. "Here is a way we can get twice as much work done with half the payroll. Think what that would mean to our net earnings. Lot O. Sheckels would let us build that new building I have been dreaming about for years." The Old Man skipped over to the window, turned around and cried: "Look, Joe, look. Right over there. Right there across the street is the place I have had my eye on for a long time. Can't you just see it—the biggest skyscraper in Tincup? Isn't it wonderful?"

"Boss," said Joe with a queasy feeling in the pit of his breadbasket, "I don't know nothin' about them newfangled ideas. I never have trouble getting people to work. When I start 'em on a new job, I show 'em the right way to do the job. That's what Oscar calls, 'giving 'em proper work habits.' Then I give 'em head room. If they work best without a boss, I fix it that way. If they need a boss, I see to it they always have one on deck. We don't have no trouble. We get good production."

As Joe spilled his monologue on personnel problems, the Old Man's mood evaporated like high test gas on a hot pavement. He shambled over to his chair, sat down and stared at the waste basket. He looked up at Joe and there was pain in his eyes. His momentary dream had been rudely deflated. Joe knew that once again he had missed the boat in his relations with the Old Man.

The Old Man's eyes dropped to a sheaf of papers on his desk. On top of the pile was a complaint sheet. He grabbed it and waved it while Joe braced himself for another storm. It was not long in coming. The Old Man bellowed:

"We were twenty minutes late getting out the run yesterday. You stand there and tell me you know it all, you jack of all trades and master of none. Every time I go down in the pit we get out on time. Sometimes it looks like the job is too big for you. Can you give me an explanation in ten words?"

"I can do it in seven," yelped Joe. "Your two shirttail relations had a fight."

"That's an alibi," said the Old Man sternly. "I never see any of this fighting you talk about."

"Of course you don't," said Joe. "Every time you plan to go downstairs the whole kaboodle know about it a day ahead of time."

By this time the Old Man was standing up, waving a finger at Joe. His mouth was open to roar an ultimatum when the door opened and Frank Ness Daub walked in. Frank, taking in the situation at a glance, immediately said:

"Pop, Gorie and Inky are at it again today. I told them both that if we were one minute late starting I would fire them both. They told me I didn't have the authority and to get the hell out. I guess they are right at that. So, it's your baby."

"What do you mean, it's my baby," said the Old Man. "What kind of language is that? Did I send you to college to learn to talk in riddles? You and Joe are in charge of production. If you two men were executives, these mixups would not happen."

Frank Ness had a bee in his bonnet. It had been there a long time. This was the moment he had been waiting for. He exploded:

"Pop, I have the title of Assistant Production Manager here. You hand me responsibility but not authority. All the

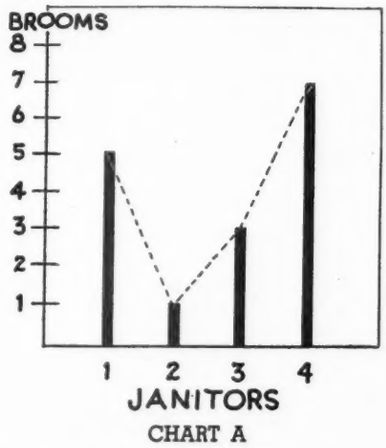


CHART A

Bar chart showing the number of brooms in possession of each janitor. Dotted lines are drawn to show how the chart would look if drawn as a time series chart.

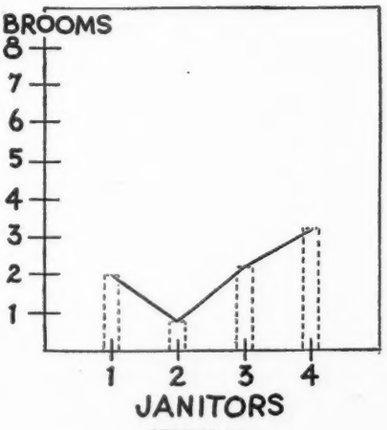


CHART B

Time series chart showing the usable value of the brooms in possession of the janitors. Dotted lines are drawn to show how the chart would look as a bar chart.

employees know it. Just remember that every time the men laugh behind my back they are not laughing at me, but at you."

"Son," said the Old Man pontifically, "there is an old saying about a new broom sweeping clean. Neither of you has sufficient balance to exercise good judgment. If I gave both of you full authority, you would wind up by firing all the worthwhile people in the building. The first thing an executive must learn is how to accept and carry out orders before he is capable of giving them. Just to illustrate and make my point clear I will again ask Joe for the data he has been promising me on the janitor trouble."

The Old Man glanced at Joe with a withering look and turned as though to terminate the interview. "Boss," said Joe, quietly, I have it right here in my pocket. This is the nuts.—"

"Can't you speak English?" fumed the Old Man, who seemed annoyed to find his bluff called.

"It's the cat's whiskers," said Joe all excited at the prospect of proving his point. He dropped a sheaf of papers on the Old Man's desk, then picked up one and handed it to the Old Man who accepted it with a sour smile.

Joe said: "Look, Boss, this first pair sure tell the story. (*See A and B.*)

Chart A shows how many brooms each janitor had. That one shows they were not evenly divided. Chart B shows the value of the brooms. You can see for yourself there is no relationship between the number and the usable value of the brooms. That's what I was getting at on that sheet I first gave you. That proves poor housekeeping—no control. No wonder the men were sore and discontented."

The Old Man looked over the charts and pretended he understood them. He realized Joe had a good point, but he could not let him get away with an explanation so easily. Suddenly he shot out," Joe, right here you have proved you do not have the executive approach. If you were half as smart as you think you are, you would have combined these on one chart to save my time."

The Old Man smiled at Joe in a very superior way. Joe was ready for him: "I got that right here too, Boss. See? The next sheet. That one sure tells the story. Take a look at this one." (*See Chart C.*)

"What was that?" queried the Old Man sharply.

"I mean, look at it," said Joe. "Ain't that one a darb? Them comparisons stand out just like a sore thumb."

The Old Man looked as if he had been hoist on his own petard. He looked from one sheet to the other trying to find something to kick about. Seeing the Old Man apparently knocked for a loop, Joe said: "Ken Sweep had seven brooms—"

"That is just the point I was going to make," said the Old Man triumphantly. "You and Frank constantly complain about my keeping your people straight. Now you bring me charts that practically force me to ask questions about your people individually. If you constantly make it necessary for me to investigate the welfare of individual employees, you

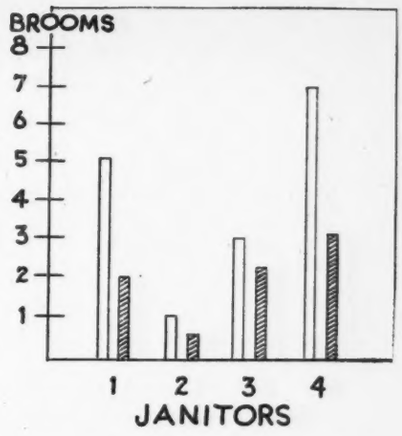


CHART C

Bar chart combining charts A and B. The open bar section duplicates Chart A and the shaded bar section duplicates Chart B.

are out of order in your complaints. I want to hear no more from either of you."

Before the Old Man could budge an inch, Joe came up with another one. "Boss," he cried, "I just made all those preliminary charts to show you I know my onions. Slant your glims on this one.

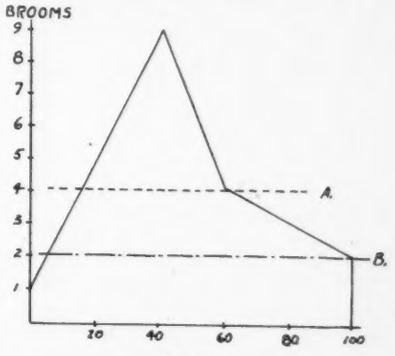


CHART D
PERCENTILE VALUES

A.—Actual average brooms per janitor.
B.—Actual value of average brooms.

A percentile-quantity chart for impersonal evaluation of the problem.

"That's what I want to give you from now on. That shows the problem from the impersonal standpoint. That one is a lulu. All you need is one look. Just like shooting fish in a barrel. Ain't it the berries?"

The Old Man sat down and studied Joe's doodles. He was visibly impressed with the job. He understood the principle of the charts and shortly realized that Joe had proved a point. But Joe and Frank were too elated to suit the Old Man. Rubbing his hands together, he said:

"This is all very nice and interesting. But, it doesn't mean anything. We have a large business here, many people to be responsible for and the community to serve. If we are going to have hour-long conferences about a few brooms, we will shortly go bankrupt. Just suppose you

tell me what constructive measures you have taken to prevent further trouble in this department."

When the Old Man came up with that one, Joe felt sure he had him on the run. Joe was following one of Grampa's ancient wheeses, "Don't tell everything you know as soon as the horn blows."

"Boss," said Joe, "It's this way. I got a 'bank' set up now. Each janitor has a first-class broom for the offices. They draw from the bank according to the kind of work they have to do. When the new brooms lose their edge they go in the bank. But the deal is this: We have no more than twenty brooms in the bank. Twice a week I check what goes in or out of the bank. The men are tickled as they have a hand in the deal. We got it figured out we will use only half as many new brooms from now on. That's saving you dough."

"Very interesting," said the Old Man. "The main point is its workability and how much time will you have to put in keeping it working."

"That's the sweet part of it," grinned Joe. "One hour a week is all I gotta put in, maybe only half that after I get things going right. That's the way I run all my departments. I level things off so everybody has a fair and decent day's work. Most people are honest and square and want to do the right thing. When we have the other kind, I wanta get rid of them. It ain't fair to the people who like their jobs to have someone around who is griping and looking for trouble. Them's the ones I wanta tie a can to."

"That's right, Pop," butted in Frank. "If you give me and Joe a little leeway—and authority—we'll work for nothing on salary. Just give us half what we save by getting rid of the ones who never should have been on the payroll."

The Old Man paid no attention and shuffled through another flock of papers on his desk. It was another set of complaints. He looked at Joe and said:

"Joe, against my better judgment, I am going to take another chance on you." He leaned down and pushed a button.

Inna Fishen stumbled through the doorway in answer to the call. The Old Man paid no attention to her mishap and merely said, "Take a memo," and started dictating. Inna skipped back out of the office and hunted for a pencil and notebook. In a few minutes she was back and requested the Old Man to repeat his dictation. Frank winked at Joe and left.

As the memo was being dictated again, Joe's spirits rose. He grinned broadly, threw back his shoulders, and rubbed his hands. As soon as Inna Fishen left the office, Joe said, "It's about time for that raise now, ain't it, Boss?"

"Well, Joe," said the Old Man smoothly, "you know business is not what it should be right now. Now, you show me what a nice job you can do over there, then we will talk it over."

Joe started for the door, his momentary elation evaporating into thin air. As he reached for the door knob, the Old Man spoke again, "Joe, John Donkey has done a marvelous job in the pencil replacement department. I have other and more important work for him now. Keep that department running at its present high state of efficiency."

"O.K. Boss," said Joe dejectedly. "I'll do my best. I suppose you want me to start in there next Monday when my vacation is over."

"Well," said the Old Man snappily, "This is a new and important responsibility for you. I am really surprised that you would even think about a vacation at a time like this. However, if you insist on taking more time off—"

"I'll be on the job tomorrow," said Joe hastily as he went out of the office and down the hall.

(*To Be Continued*)

Camera Shutter and Photo-Flash Synchronization Tester

By E. J. ANDREWS*

**Photo-engraving Superintendent, Decatur (Ill.) Herald and Review.*

MANY press photographers could justify the time and work involved in building a reliable instrument for testing photo-flash equipment. Camera shutters speedguns, batteries and lamps can and do fail at critical times, occasionally on important assignments. The war has made it difficult to obtain repairs and replacement parts. Good batteries are not easy to buy even with priorities. It is therefore imperative that these important photographic tools be conserved and treated like the precious things they are. They must be maintained in the best possible working order and adjustment.

EDITOR'S NOTE:

Many photo-engraving executives throughout the country are intimately associated with the photographic department in their plants. Many of them function as combination staff photographer and engraver. It is for this reason that we are printing Mr. Andrews' interesting article about the construction of a device to check synchronization of camera shutter and photo-flash equipment.

The No. 1 problem in maintenance is that of keeping the flashgun in proper synchronization with the camera shutter. There are ways in which to make tests but most of them are unreliable, tedious or expensive, sometimes all three.

A positive, easy-to-operate device by which a photo-flash gun and shutter can be checked for precise synchronization is almost as valuable to a press photographer as is his camera.

Such a test outfit can be built at small expense and if well designed, will operate to complete satisfaction.

We have built one and gladly share its design to enterprising photographers who would like to duplicate it.

The accompanying picture and drawings describe a unit that does three very accurate testing jobs. It will measure any shutter speed, disclosing that few shutters deliver precisely the 1–10, 1–25, 1–100 or any other speeds at which they may be set. Secondly, the apparatus tells how long it takes for a flash lamp to burn and at what period it reaches its peak illumination. Third, it positively reveals the degree in which the shutter opening synchronizes with the burning of the lamp.

The operating principle is that of projecting on to a rotating photo-sensitive material two tiny light beams, one coming from the shutter and the other coming from the light source. This is achieved by mounting a piece of enlarging paper on a turntable which rotates beneath two openings or light channels. The light passing through the shutter will expose one arc on this paper while the light from the lamp exposes another arc.

These two arcs can be brought very close together by using a system of mirrors or a periscope. This will be understood by reference to the drawing, Fig. 1.

Development of the enlarging paper graphically records exactly what happened when the shutter and speed-gun were fired, and, these values are measurable, Fig. 2.

The turn-table speed and the size enlarging paper to be used are related. Experience indicates that the paper, passing under the light sources or pinholes, should move at the rate of 25 to 35 in. per sec.

A phonograph turn-table may be used but will require a rather large piece of paper. For example, if the pin-holes are placed at 3¼ and 3½ in. respectively from the center, the speed of a phonograph turn-table at 78 r.p.m. will carry the paper under these openings at a rate of approximately 25½ and 26½ in. per second. This is about right, but the paper required would be 7 in. square and the turn-table very nearly 10 in. in diam. It is a nuisance to have to cut circular paper; therefore the diagonal dimension of the paper used determines the size of the turn-table.

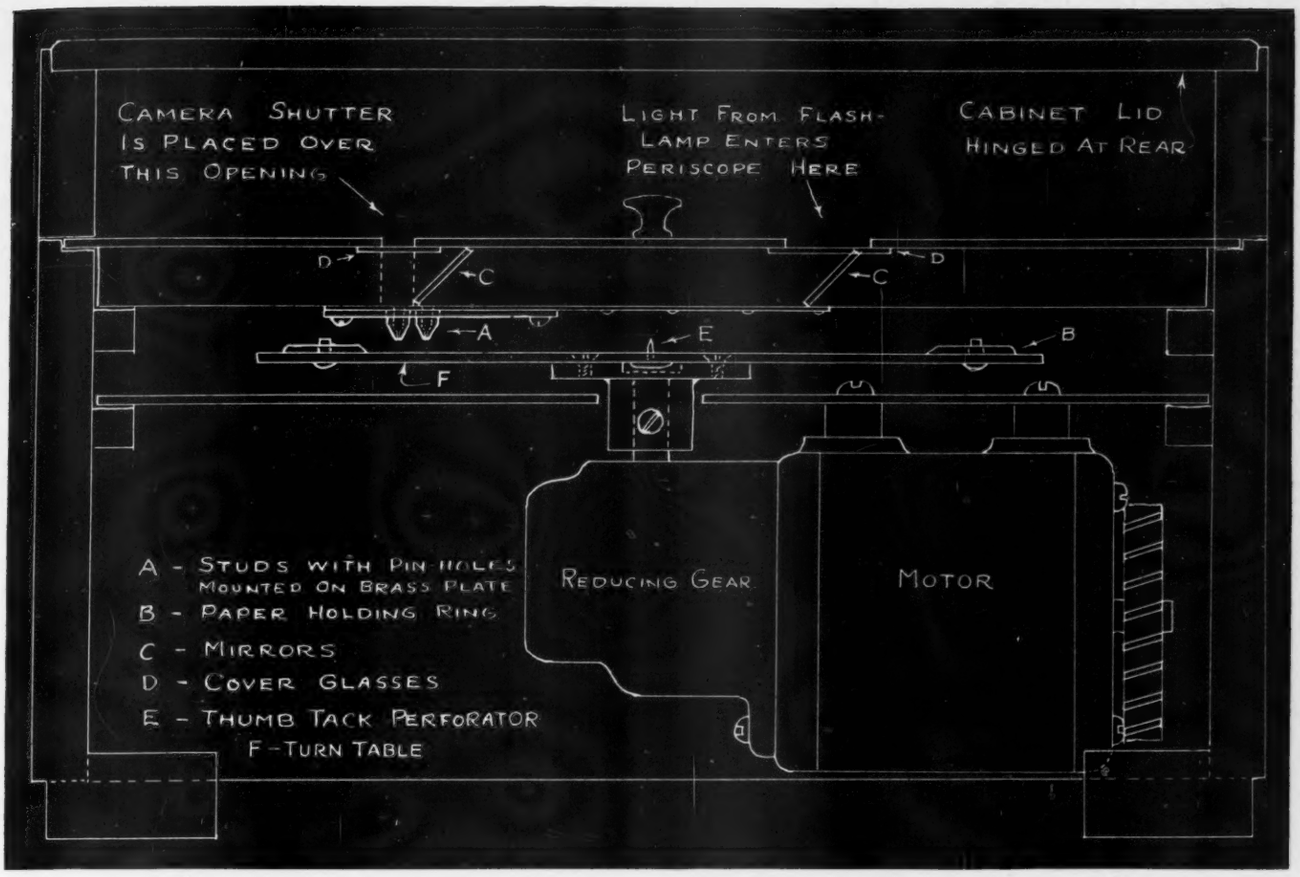

CAMERA SHUTTER IS PLACED OVER THIS OPENING
LIGHT FROM FLASH-LAMP ENTERS PERISCOPE HERE
CABINET LID HINGED AT REAR
A - STUDS WITH PIN HOLES MOUNTED ON BRASS PLATE
B - PAPER HOLDING RING
C - MIRRORS
D - COVER GLASSES
E - THUMB TACK PERFORATOR
F - TURN TABLE
REDUCING GEAR
MOTOR

Fig. 1.—Cross-section view of Andrews Camera Shutter and Photo-Flash Synchronization Tester shown in Fig. 3. Actual size of the cabinet is 11 in. wide by 10 in. deep by 7 in. high. The small, fractional h.p. 60 cy., a.c. motor is similar to the ones used by Philco for opening and closing a door in refrigerator window display.

Obviously, a higher speed on the turn-table permits of a smaller size sheet of sensitive paper and also more compact design of the unit.

It is possible to use a phonograph motor and gear it to a turn-table of suitable size or drive it with a system of pulleys and a spring-wire belt such as used on home moving picture projectors.

The device described here was built around a small fractional h.p., a.c. motor used in a window display fixture. These motors were common enough before the war and may still be found around electrical dealers, department and hardware stores. Philco provided its dealers with this type of motor which was used to open and close the door of a refrigerator in a window display. A shaft speed of 120 r.p.m. was obtained by changing the gears. This is 2 r.p. per sec. and worked out very good from several desirable standpoints.

Light direct from the flashlamp passes through the periscope and onto the paper at a point 2 in. from its center of rotation. The shutter opening is ¼ in. farther from the center. The two light beams describe arcs of 4 and 4½ in. diam. respectively. A 5 in. square piece of enlarging paper is used on a turn-table 7 in. diam. The paper is held down by a ring placed over two studs riveted to the turn-table.

Illustrated in Fig. 2 is one of the records produced. The radial lines were drawn on after processing the paper. The angles are easily measured with a protractor and the degrees enable exact calculation of the shutter and lamp periods.

The sharp pin (*E*, Fig. 1) which is at the center of the turn-table, establishes a center in the paper and also prevents the paper from shifting while it rotates. This makes the use of a celluloid protractor quick and easy.

At 2 r.p. sec., 720 deg. pass the light openings. Therefore, a 1/100 sec. shutter

MONTHLY PRODUCTION OF PAPER AND PAPERBOARD, BY TYPE, NOVEMBER-DECEMBER 1943[1]

War Production Board—Forest Products Bureau
(Tons of 2000 pounds)

TYPE OF PAPER	November	December[3]	TYPE OF PAPER	November	December[3]
All types[2]	1,422,475	1,360,635	Wrapping papers (cont):		
Newsprint	65,833	63,962	Glassine	6,916	6,845
Groundwood papers	50,613	48,991	Greaseproof	2,077	2,460
Printing	11,636	11,706	Vegetable parchment	2,904	2,648
Specialties	38,977	37,285	Converting papers	34,831	36,358
Book papers	131,868	126,427	Other wrap. papers	51,097	49,639
General printing	79,844	75,862	Special industrial	16,301	15,066
Converting papers	34,719	33,966	Sanitary papers	65,542	62,487
Other book papers	17,305	16,599	Tissue papers	13,260	12,368
Fine papers	84,107	77,356	Absorbent papers	7,395	8,214
Writing papers	58,157	51,923	Building papers	75,010	71,214
Drawing, cover, text	4,954	4,500	Paperboard	716,015	685,407
Reproduction papers	8,297	8,737	Container board	349,337	331,061
Bristols	7,557	7,399	Tube stock	29,704	29,622
Thin papers	4,478	4,311	Folding boxboard	163,703	156,925
Other fine papers	664	486	Set-up boxboard	61,644	61,459
Wrapping papers	196,530	189,137	Cardboard	5,977	5,446
Bag papers	38,955	38,161	Building board	86,029	81,704
Multi-wall heavy duty sack	31,472	29,686	Other	19,621	19,190
Wrapping	28,278	23,340			

[1] Data cover all known mills, and represent a continuation of the monthly statistics initiated in "Facts for Industry," Series 24-2-1. For annual data prior to 1943, and a description of the statistics, see "Facts for Industry," Series 24-1-1. Refer all inquiries concerning these data to: Bureau of the Census, Washington 25, D. C.
[2] Includes a small quantity of paper not classified by type.
[3] Preliminary.

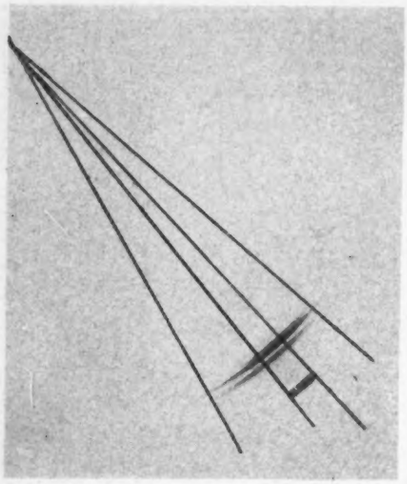


Fig. 2.—Recording made on enlarging paper (reproduced actual size) in the Andrews Camera Shutter and Photo-Flash Synchronization Tester. As will be understood after reading the accompanying article, a suitable size sheet of light-sensitive enlarging paper is placed upon the turntable of the testing machine shown in Figs. 1 and 3. The center of the sheet is indicated in this figure by the stab mark of the tack point where the radial lines, in the form of circle sectors, represent exposure duration of the shutter and the flash bulb. The shutter arc or sector of a circle (farthest from center) covers an angle of 4 deg., indicating it is a trifle slow. The lamp arc of 20 deg. represents about 1–36 sec. Synchronization of shutter speed with the illumination peak of the flash lamp is good. Exposure was made at 1–200 sec. with Press 40 bulb.

speed would describe an arc of 7.2 deg. Similarly, a ½ sec. exposure (using a photoflood lamp for light) would make a complete circle. An exposure of 1/400 sec. makes an arc of 1.8 deg.

Any turn-table speed can be used with the degree system, it being necessary to determine exactly what the turn-table speed is and use 360 deg. for each revolution as a multiplying factor. The speed to determine, of course, is the revolution per second or 1/60 of its r.p.m. Once this is determined, fractions of a second become certain degrees of arc.

It should be explained that the design of the cabinet (shown in Fig. 3) must have some light-proof properties or fogged paper will result. The hub of the turn-table will seal out light which otherwise would enter the one opening necessary for the shaft. The platform is light-proof by virtue of the overhanging metal top and the stops on which the platform rests.

Flat-black paint or lamp-black mixed with a thinned out shellac solution will effectively darken the interior parts.

Old engraving plates or scrap engravers metal, copper, zinc or brass are suitable materials for platform cover, motor support, turn-table and paper holder ring. The metal can be 16 or 18 ga.

In addition to hinges on the cabinet lid, there is a hinge to permit raising the platform so that the turn-table can be loaded. Piano hinges for this purpose from old radio cabinets or junked pianos are not hard to obtain.

The pin *E* on the turn-table *F*, Fig. 1, can be made with a thumb-tack pushed through a tight fitting hole exactly in the table center. The tack must be soldered. The turn-table is fastened to the drive shaft with a hub, three or four flat-head machine screws being used.

The most difficult construction is the periscope by which both light openings are brought close together. Since the periscope need be no larger than ½ in. by ¾ in. it can be made as follows: Cut a stick accurately ½ in. by ¾ in. and mitre it in the center at 45 deg. angle on the ½ in. face. Move apart 3½ in. and glue to both sides of the sticks the rest of the half-inch thick wood to complete the platform top. When dry, the ⅜ in. by ⅛ in. pieces of mirror (*CC*, Fig. 1) can be fastened to the angular faces by wedging in complementary shaped pieces of cardboard or 1/16 in. wood. Airplane cement is good, but keep adhesive away from the silver mirror backing. A plate made of tin is fastened with very small screws to box in the periscope on the underneath side. Two 3/16 in. holes are drilled ¼ in. on centers where indicated so that light will pass through the pin-hole openings.

The pin-holes may be advantageously made of two conical shaped studs (*A*, Fig. 1) riveted or soldered to a brass plate. They are drilled almost through with a No. 44 drill and then pierced with No. 80 drill through the tip. This type of construction brings the light openings close to the paper and permits removal for cleaning. Further, if found to be necessary, a piece of filter material can be fastened under the brass plate to subdue the intensity of light and thus control the type of image produced. Or, it can be made the simple way by punching two holes with a small needle through a piece of tin. If the pin-holes are more than ⅜ in. from the paper a rather wide band or image will result.

The drawing shows other features of construction much of which can be modified to suit other types of motor and drive. The blocks were placed at the bottom of the cabinet as legs to raise the cabinet and permit circulation of air around the motor. Otherwise it would run too warm. We cemented a circular piece of velvet over the shutter window to provide a soft vest for the shutter.

The extension cord fits a plug built into the cabinet. The detachable cord is stored in the cabinet top along with an instruction booklet and a protractor.

Much or little workmanship may be expended depending on facilities and taste. Access to a small machine shop lathe is a great help, although the necessary machine work will not entail much expense.

Once built, the photographer will take great pride and joy in a gadget that removes all doubt as to how his camera and speedgun are operating.

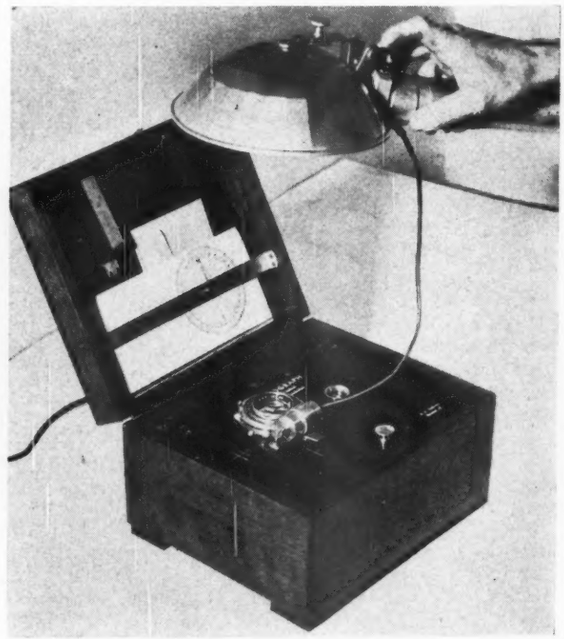


Fig. 3.—This figure shows the Andrews Camera Shutter and Photo-Flash Synchronization Tester at the moment of making a test. The Supermatic camera shutter has been mounted over an orifice in the zinc top plate. Connected to it in the regular manner is a Mendelsohn Speedgun. When the gun button is pressed, light passes through the shutter and also through the opening in the top plate. This opening can be seen at upper right of the shuttermechanism. Duration of the shutter opening and duration of the lamp flash are recorded on a revolving sheet of light-sensitive enlarging paper mounted on a turn-table immediately below the zinc top plate. The name "Synchrograph" given by Mr. Andrews to this device and other markings were etched by photo-engraving in the 16 ga. zinc top. The top plate later was enameled black. The cabinet was made from cherry blocking lumber. Note the protractor and instruction folder, also place for extension cord under the other brass strip.

ware & care

or

wear & tear?

A good old-fashioned word, that—*ware*, the quality of caution and discretion, and *care*, its eldest son. Their deplorable relatives, *wear* and *tear*, are altogether too well known.

Carelessness or indifference on the part of nations and individuals is never excusable. Be ware *and take* care *of your Government and then see the axis* wear *and* tear! *Buy Bonds!*

Linotype Caslon Old Face

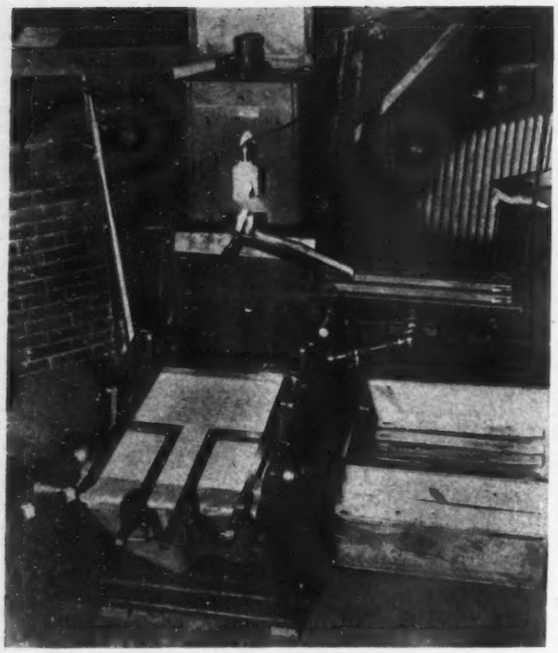


Fig. 1.—Here is view of combination metal melting furnace with which may be cast stereotype flat casts and metal feeder pigs for Intertypes from the same spout in plant of the Columbus (Ind.) *Evening Republican*. Shown is the casting box set-up for casting half of a full-page stereotype mat using floating gauge and auxiliary L bars.

Near the top of this illustration are shown the mat preheating box, Goss metal release valve, capillary tube to the Partlow governor and partial view of the pot charging chute. At left is the rake used to move slugs from the chute into the metal pot as needed.

METAL MELTING POT *modified to permit making stereotype flat casts and line-composing machine feeder pigs by same unit*

By RAY S. BROWN*

**The Evening Republican*, Columbus, Ind.

THE writer has worked out a scheme for supplying molten type metal to both a stereotype flat casting box and a mold for Intertype feeder pigs, from the same spout on a metal-melting furnace. The device is now in daily use at the Columbus *Republican* and has been found to be quite a time and labor saver, since one melting furnace serves both purposes.

A Goss furnace carries an improved type of metal release valve on its 800 lb. gas-heated melting pot. It supplies metal to a Hoe full page casting box, as well as a three-cavity pig mold, both water cooled. By the use of this outfit, one man can make all the casts for a 12 page newspaper and a day's supply of pigs for five Intertypes in five hours.

A Simplex pig mold was used because it had trunions and water connections on the sides. This enabled the end of the mold to be located very close to one side of the flat stereotype casting box without interfering with movement of the platen. The trunions of the pig mold rest on angle irons attached to the frame of the casting box. When the mold is inverted the pigs fall into a box. A short metal-flow chute extending from the pot to a point over the pig molds was constructed of sheet iron. It hangs on a hook on the front of furnace when in use and, by the aid of an attached wooden handle, can be turned to serve each mold cavity. When not in use it is removed.

The metal pot is charged with slugs and small cuts by means of a chute of the concrete mixer type, which is hinged to the side of the furnace. It was constructed from a steel coal chute. After being loaded with metal at floor level, this chute is elevated to a sloping position with the aid of a chain hoist. Metal is then raked into the pot as needed. A Partlow gas governor holds the temperature of the metal steady at 560 deg.

Waste gases from the rear of the furnace are discharged into a sheet iron box 4 ft. long and 4 in. by 10 in. section. The gases emerge into a 4 in. pipe, which carries them up to the hood. Mats to be cast are laid on top of this box for pre-heating.

Another device in daily use is a set of type-high "floating" gauge bars, designed to relieve the mat of side pressure so it will be free to expand and flatten out when the hot metal strikes it in the casting box. This is accomplished by attaching to each side bar, two maple gauge blocks, slightly thicker than the thickness of bar plus the mat. Each block is about 2 in. by 1 in. in size and is loosely attached to the bar by screws. The holes in the wood have clearance so the blocks are free to move slightly against the bars. These blocks, which do not touch the mat, take all the lock-up pressure, and prevent the bars from spreading apart when metal is poured.

In effect, the bars are "floating", and free to adjust themselves to the thickness of mat. Thickness of the cast can be increased easily by adding gummed tape to the blocks. The blocks farthest from the handles have bevelled ends so they can be grasped conveniently by the fingers for adjusting them on the mat. The end bar, of same thickness as side bars, has no blocks, but is hinged to the rear of the platen. The hinges take all the weight of metal when the platen is vertical. When the platen is horizontal, the end bar may be swung up out of the way by the aid of a handle attached to its end. Wood has been found to be superior to iron for the gauge glocks because it is slightly compressible. This tends to distribute the lock-up pressure evenly at the four points of contact, preventing the bars from slipping. The wood blocks also serve as "cool" handles for lifting the bars.

A unique feature of these bars is the end handles which are formed of sheet

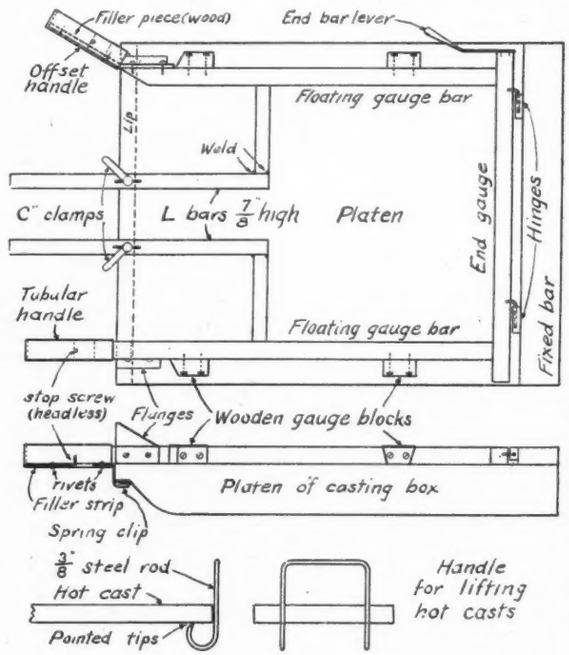


Fig. 2.—Plan and side view diagrams showing construction and arrangement of component parts of stereotype flat casting box in plant of Columbus (Ind.) *Evening Republican*. In the upper plan view diagram are shown the floating gauge bars and the L bars held in place by C clamps. In the lower section of this Fig. 2 are shown side and end views of lifter or handle for carrying hot stereotype flat casts.

The Name DUPLEX . . .

Stands for

Durability

Unsurpassed Flexibility

Patented Features

Leadership in Its Field

Engineered for Production

Xcellent Manufacturing Facilities

All of which add up to an unbeatable combination in DUPLEX Presses for the entire NEWSPAPER field.

★ ★ ☆

THE DUPLEX PRINTING PRESS COMPANY

BATTLE CREEK, MICHIGAN

metal and insulated with tape. They fit the square ends of the bars and slide freely on them through a limited distance. Each has attached to it a small flat spring, which engages the under side of the platen lip, to hold the bar in position when the platen is raised. The left side bar is sawed off at an angle, and a bent extension carrying the handle is attached to it. This gives the operator an unobstructed view of the metal level as it rises. Small sheet metal flanges are attached to the bars just below the handles. These fill in the angular space caused by the bevelled top of the box, and prevent metal from splashing over onto the gauge blocks. The flanges are not shown in Fig. 1. A spot-light attached to the front of the furnace further aids in watching the metal level. These precautions against overflow probably would not be necessary with hand ladling of metal.

No cardboard is used between the cast and the back of the box. This results in rapid cooling of the cast. With hand pouring, cardboard would be needed to slow down the escape of heat and give a sharp cast.

In order to avoid the fitting of base and expedite the cutting of mortises, all casts are made slightly over type-high. They are then planed to gauge on a half-page Plane-O-Plate machine. Full-page mats are cast in two sections to lessen the weight of metal and to enable them to be planed. The two halves are then matched together on a saw-trimmer. To keep the weight of metal at a minimum in a half-page cast, two auxiliary L bars are used, as shown in diagram Fig. 2. They rest directly on the bolster of the mat and tend to flatten out all wrinkles in the end of the mat. They are held against the lip of the platen by two ordinary C clamps. The L bars are made of ⅛ in. square steel. Being thinner than the gauge bars, they do not crush the bolster, yet they seal off the metal from the corners of the mat. The space between the L bars acts as a gate, the full head of metal insuring a sharp cast.

A convenient tool for carrying one end of a hot cast from the box to the cooling tub or saw, has been constructed from a piece of ⅜ in. steel rod, bent as shown. The tips are sharpened to prevent slipping against the bottom of the cast.

Pitch Line *explained as applied to newspaper rotary presses — Adding lines to pages can be accomplished without difficulty by newspapers which haven't yet gone into the matter*

By **FRED C. HUDSON***

**Director, Newspaper Engineering Dept., Intl. Printing Pressmen's & Assts.' Union. Abstract of speech delivered before New Jersey Mechanical Conference, Newark, November 1943.*

THERE seems to be considerable confusion in the minds of some pressmen regarding the term "pitch line". This not only applies to the small pressrooms but larger ones as well. Stripped of all technical phrases, "pitch line" means nothing more than that the plate and impression cylinders are of the same diameter and circumference. Years ago, the press manufacturers adopted certain recommendations for packing their particular presses. For instance, the undercut or cutoff on the impression cylinder of the Hoe press is 0.125 in. The same thing is true of Scott and Wood. The undercut on most of the Goss presses is 0.1485 in. Packing recommended by Wood and Scott is 0.145 in.; Hoe, 0.146 in.; Goss, 0.175 in. There are a few exceptions to the above rule. Taking for example Hoe presses, if 0.146 in. packing were used, this would mean that when new blankets are put on the blanket cylinders are 0.021 in. larger than the plate cylinders. This is, provided, of course, that the plates are of the right thickness of 0.4375 in. Of course, in time the blankets will compress to some extent and when they reach 0.125 in. the cylinders will then be on "pitch line" or of the same circumference.

When these standards were adopted many years ago, the blankets that were manufactured at that time were much softer than are the blankets of today and these blankets did not have the resiliency of the present day packing. With the blanket of today, we believe a more successful operation of the press will be accomplished if the presses are blanketed nearer "pitch line" than the figures set up by the manufacturers years ago. This is being done in a number of pressrooms with excellent results.

Some pressmen have been reluctant to experiment with thinner blankets that would start them out nearer the "pitch line", the reason, of course, being the fear of the blankets compressing so much in thickness that the plate and impression cylinder gears will become bottomed. Of course, there can be no set rule that will be applicable to all presses as consideration must be taken of some of the older presses that have certain characteristics which would prevent this. Also, to be considered are the various folders, angle bars and presses that are equipped with balloon formers which usually require more paper feed than if the webs were going into the lower former.

While "pitch line" is normally considered the limit on impression, the printing cylinder gears on some of the newer type presses are designed so that it is possible to go several thousandths below "pitch line" without any danger. It is advisable, however, that this be checked with the press manufacturer.

In the past eighteen months, a large number of newspapers have reduced their roll width. It doesn't seem that much more can be accomplished in this regard. It is also true that the number of lines per page have been increased, but in this connection, we believe there are a number of papers that could easily add from one to four lines to their page without any difficulty.

With a blanket opening of ¾ in. and ½ in. margin bars, it is possible to print the following overall lineage with ½ in. head and tail margins.

21½ in. cutoff—285 agate lines
22¾ in. cutoff—304 agate lines
23⅝ in. cutoff—315 agate lines

It is an easy matter to make up an experimental page with whatever added lines you think are possible on your equipment. With a page length of an absolute maximum, it, naturally, means that both the stereotyper and pressman must work to a closer tolerance, the stereotyper in the trimming of his mats and setting them in the casting box, and the pressman must make sure that his plate and impression cylinders register perfect so as to prevent printed matter from hitting in the blanket openings. An addition of these few lines may not seem important, but when they are multiplied by the total number of pages, it is quite an item to your publisher.

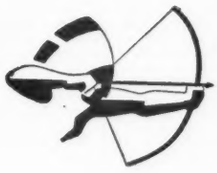
MEET THE AXEES
The Gremlins of Accidents

BLINKY

Here's a guy whose deeds outrageous
Are insidious and contagious;
Keep your watchfulness and quickness
And don't catch his sleeping sickness.
Though his name is really Blinky,
If you meet him, call him Stinky!

NATIONAL SAFETY COUNCIL

You already *have* the printing "know-how"



WHAT you already know about printing is a priceless ingredient in operating a profitable offset lithography department.

You're a skilful typographer... a master of halftone and four-color... more familiar than any one else with the use of coated as well as uncoated papers. These are basic in fine offset work, too. You can easily apply your letterpress craftsmanship to the simple technique of offset lithography. It will enable you to set for it the same high standards you have already achieved in letterpress... and you'll also pyramid your business and your profits.

To take your proper place in the postwar world, offset lithography and letterpress... twin printing processes... must be available to your customers. Business and industry will expect you to have them. Both have their places. Each supplements the other.

When Victory comes, the right equipment for an offset department will be ready for you at ATF... complete from darkroom to pressroom. Full information can be given you now by your ATF Salesman, even to approximate costs.

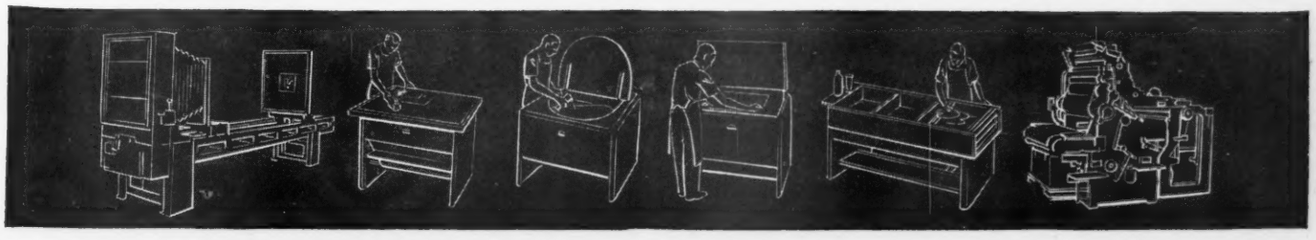
Set Aside Dollars...

...NOW

with ATF's *Civilian Priority Delivery* plan, for the presses you will need when the war ends. Full details from your ATF Salesman or upon request.

AMERICAN TYPE FOUNDERS... *Offset Division*

200 ELMORA AVENUE, ELIZABETH 3, NEW JERSEY • Branches and Dealers in Principal Cities



Good Reproduction Via Stereotyping

NEWSPAPER mechanical and production executives are well aware of the technical procedures necessary to insure good stereotype reproduction of type matter and illustrations. The conscientious executive watches all of the form preparation and stereotype procedures to eliminate anything which will militate against maximum appearance of the printed paper.

In many instances, however, he is not to blame for eye-offending spots here and there because he has no control over customs into which advertisers may have fallen. One of these is the practice of reproducing signatures in display advertising one or more times removed from the original zinc etching itself. The only remedy in cases of this kind is to make an attempt to secure the cooperation of the newspaper advertising department executive and the responsible advertiser executive.

Our purpose in printing the accompanying miniature reproduction of an advertiser's signature is to mention that if they have not already done so, they can suggest the effective plan used by the Milwaukee *Journal* in helping educate its advertisers.

Just recently, the *Journal* presented proof sheets before a local advertising clinic to demonstrate visibly the loss of width, height and detail which occurs when reproduction is several times removed from the original zinc. The point we wish to make here is that the *Journal* is doing something constructive in showing the advertiser that it wants to print the best possible paper and at the same time is showing him how he can secure maximum appearance of his advertisements.

Production Manager John P. Keating reports that the *Journal* is making an effort to clean up the appearance of the paper with respect to signatures and to a limited extent to eliminate black borders, large reverse cuts and certain bold face type.

Graphic illustration of loss of width, height and depth in successive stereotype moldings 10 generations removed from the original zinc cut. The original zinc cut (No. 0 above) measured approx. 55½ picas wide; the final cast (No. 10) measured approx. 37 picas wide.

In this illustration 0 is the original zinc cut. No. 1 is the stereotype cast made from mat of the zinc cut. No. 2 is the cast made from mat of cast No. 1. No. 3 is the cast made from mat of cast No. 2, and so on successively up to and including cast No. 10.

This miniature reproduction was made by photo-engraving from one of the charts exhibited by the Milwaukee *Journal* before a local advertising clinic. The purpose was to demonstrate graphically to advertisers how they can improve the appearance and effectiveness of their display advertising.

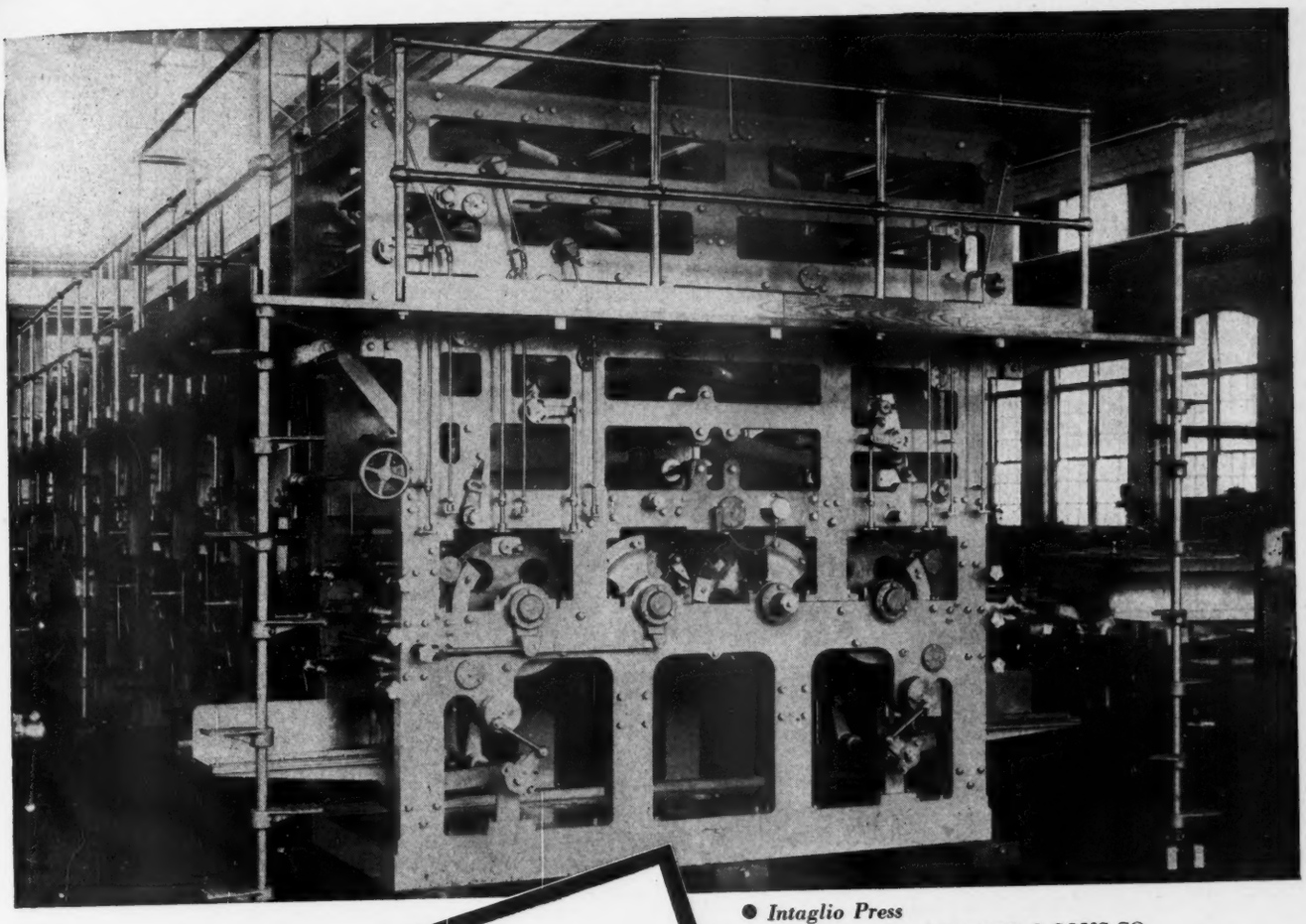
Meets To Select a Newsprint Mill Site

The SNPA Newsprint Mills Committee met in Birmingham, Ala., on January 24 to receive and study proposals for sites for future newsprint mills. Representatives of various sections in the South having available sites appeared before the committee. The committee determined that sites selected would not be announced until after they had been surveyed by pulp and paper experts and were acceptable to mill operators. Plans for completing the groundwork during the war will be developed so that construction may begin immediately after cessation of hostilities.

The SNPA Newsprint Mills Committee agreed that newspapers in the South should not attempt construction of a newsprint mill, but will cooperate with mill operators and furnish a market for the product.

The meeting was presided over by Chairman Carl B. Short. Committee members present in addition to SNPA Secretary-Manager Walter C. Johnson were: General Manager Frank Daniels, Raleigh (N.C.) *News* and *Observer*; General Manager J. F. Tims, New Orleans *Times-Picayune* and *States*; Publisher E. K. Gaylord, Oklahoma City (Okla.) *Oklahoman* and *Times*; Victor H. Hanson, Chairman of the Board, Birmingham (Ala.) *News* and *Age-Herald*; General Manager Geo. C. Biggers, Atlanta (Ga.) *Journal*, who is also president of the SNPA.

Mr. Mechanical Executive—If you want help, want another position, or make a personal want known, take advantage of P-Double-E's gratis Employment and Service Department. Six lines, one time, no charge.



● *Intaglio Press*
Built by C. B. COTTRELL & SONS CO.

Speeding High Speed Presses

SKF
BALL AND ROLLER BEARINGS

Every time this Intaglio Press rolls is the time when SKF Bearings give a good account of themselves.

It's the time when cylinders take wings. When register is close. When waste from vibration backlash and cylinder jump ceases.

When the rolling alignment in SKF Bearings insures high load carrying capacity at all times.

Every time an SKF is specified is the time when engineers make certain of dependability in moving parts. 5470

SKF INDUSTRIES, INC. • FRONT ST. & ERIE AVE. • PHILADELPHIA 34, PA.

UTA conducting commercial equipment and obsolescence survey — Irrespective of UTA membership, all firms are asked to cooperate

AMONG the serious problems confronting printing plant owners as a result of today's war activities is that of the rapid acceleration in depreciation of printing machinery. As a direct result of the war, and the government demand for the production of maps, instruction manuals and other war printing in the shortest possible number of days, many plants are operating on sixteen and twenty - four - hour - per - day schedules. When this rapid depreciation is considered in the light of the impossibility of securing replacements and repair parts, considerable speculation is being aroused as to whether the industry is not wearing out its equipment at a rate which will prevent normal replacement and full capacity for a number of years after the war.

EDITOR'S NOTE:

MECHANICAL and production executives are vitally interested in equipment depreciation and obsolescence. We doubt if there is a single executive who hasn't run up against one of the other or both of these prime factors when making requests to management for equipment replacement. Equipment depreciation and obsolescence are uncertain quantities for the reason that there have been no universally recognized standards which will serve as guides when considering the useful life of any certain piece of equipment.

The United Typothetae of America is now undertaking the establishment of such standards through a nation-wide survey—and you can help along with this worthy objective—because the activity isn't confined to UTA membership.

Not only is it desirable that the U. S. Treasury Dept. be persuaded to accept a reasonable standard in tune with the peculiar requirements of the printing industry, but it is important that you lend your help by first reading the accompanying article—then talk it over with your business executive.

Please note that UTA's effort to establish these standards is not confined to UTA members but is open to all plants desiring to participate

Printing machinery manufacturers have long realized that a press operated sixteen hours per day depreciates considerably in excess of twice as fast as that operated only eight hours per day. This is due principally to the increased incidence of metal fatigue, the lack of opportunity for repairs and the fact that oiling and maintenance care is at less frequent periods. Unfortunately, however, the United States Treasury Department has in the past consistently refused to lay down hour rate of operation percentages, with the result that individual printers have been confronted with the necessity for filing individual requests for relief and usually with but little results.

The United Typothetae, in a brief form-letter survey sent to every printing equipment machinery manufacturer in the United States, has begun the compilation of experience figures on accelerated depreciation. To substantiate its findings, it is also conducting a survey, covering the larger American printing firms, to secure experience figures that have been used for income tax returns and, as such, accepted by the Internal Revenue Bureau of the Treasury.

To date, letters from equipment manufacturers have, without exception, not only warmly endorsed the idea of these studies which are being made in connection with the widely used UTA Cost Finding and Management Control Accounting Systems, but they have been universal in their recognition that this is one of the serious problems of the industry—one that warrants a most exhaustive presentation to the United States Treasury Department.

An interesting development of this survey is the surprising unanimity of the equipment manufacturers in urging that obsolescence be made a feature of the brief to be filed with the Treasury Department. This is particularly true of lithographic equipment which is quite often made obsolete by the rapid development in this field before the machinery itself has received appreciable wear. Several of the larger lithographic machinery manufacturers have made the statement that in their opinion post-war developments of new machinery in this field will confront lithographers with a serious problem if the Treasury Department refuses to recognize this replacement factor in allowing tax deductions. The fact that equipment bought and used by many plants doing war work exclusively has been allowed an almost double rate of depreciation highlights the necessity for this question's being solved if the printing plants of the "after-the-war" period are to be modernized without heavy losses being sustained by their owners.

Jim Cockrell, UTA President, and head of the Midwest Printing Company of Tulsa, Oklahoma, in connection with this industry study upon the part of UTA, has made the statement: "The printers of America—and by this I mean every plant that puts ink upon paper, regardless of the process used—are beginning to realize the necessity for our industry's presenting a united front. Studies of this nature that are made by the United Typothetae are for the benefit of the entire industry, and bring home to all of us the realization that what is good for our printing industry as a whole is good for you as an individual printer. Regardless of affiliation, the United Typothetae feels that programs designed to benefit the industry as a whole are a service that every trade organization in our field is obligated to perform if it is to serve in its fullest capacity."

It is expected that as soon as the experience figures obtained from individual plants can be put into proper form that discussions will take place with Treasury experts in the machinery field. The views of the Treasury Department, and its attitude toward printing plant owners' using the UTA tables in their tax returns, will be made the subject of a release by UTA and will be distributed throughout the industry. Firms desiring to participate in this program—regardless of membership—are asked to cooperate by contributing their own experience figures by letter to UTA Headquarters in Washington, D. C.

GAVC Financial Report

The financial report issued by Graphic Arts Victory Committee covers the period since start of the committee in June 1942. Treasurer Harry A. Porter's report includes all receipts and expenditures up to and including December 15, 1943.

Total receipts in money amount to $42,647.15. The value of advertising space contributed amounts to $10,057. Printing work contributed (estimated cost) totals $6,850.

For printing, lithography and typography the Committee spent $16,510.16. Miscellaneous expenses amounted to $4,344.56. Hotel and travel expenses, $7,738.99, and salaries were $10,530, making total cash disbursements $39,123.71.

A detailed statement of cash contributions is as follows: Equipment manufacturers, $20,585; trade services, $5,934; printers, lithographers, binders, lettershops, typographers and associations, $15,905; the trade press contributed $680; miscellaneous contributions, $455.12.

Advertising donated is as follows: Trade services, $1500, and the trade press $8,557.

GAVC's board of directors consists of 15 men. Hon. A. E. Giegengack, U. S. Public Printer, is honorary chairman. A. G. McCormick, jr., secretary of McCormick-Armstrong Co., Wichita, Kas., is president. Harry A. Porter, Vice President, Harris-Seybold-Potter Co., is treasurer. Approx. 21 trade associations comprising every branch of the industry are supporting GAVC, as are many individual printing, lithographic, manufacturing and service firms.

John E. Allen, editor of the *Linotype News*, was a featured speaker at the annual convention of the New York Press Association, held in Syracuse, February 11 and 12.

Mr. Allen spoke on *Modern Newspaper Makeup*.

FOR THE 3RD TIME

AUGUST 1942

MAY 1943

NOVEMBER 1943

This third citation for meritorious war production, which climaxes a long record of national service, is a source of justifiable pride to the men and women of Hoe.

The record began long before America was attacked by Japan when Hoe undertook in cooperation with the U. S. Army one of the first educational orders for armament that were placed with industrial firms. Then by the time we were forced into this world struggle, the Hoe plant was ready for full scale production.

The high quality and prompt deliveries of armament built by Hoe were formally recognized in 1942 when the War Department conferred the Army-Navy "E" on the people of Hoe. In early 1943 a star was added to the flag for continued successful performance.

Now in November, 1943, a third honor is bestowed with the addition of a second star to the pennant, a tribute to the unrelenting effort of every man and woman in the Hoe organization who enjoys the privilege of contributing to the salvation and ultimate victory of our country.

HOE

BACK THE ATTACK WITH WAR BONDS

R. HOE & CO., INC., 910 EAST 138th STREET, NEW YORK 54, N. Y.
BOSTON • BIRMINGHAM • SAN FRANCISCO • CHICAGO

Prepares for Post-War Expansion by Purchasing Building

THE W. A. Krueger Co., Milwaukee lithographers, announce the purchase of a building at 3820-30 West Wisconsin Ave. According to William A. Krueger, this is the first of many expansion plans called for in the firm's post-war program. It also marks the firm's tenth anniversary in business.

The building, to be occupied in June, will provide more than 34,000 sq. ft. of space, an increase of 100% over present area occupied. The additional space allows for greatly increased photographic, platemaking and press equipment, as wartime conditions permit. Remodeling plans, now on the drawing boards, call for one of the largest and most modern lithographic plants in the middlewest.

Of all steel and concrete construction the building which is 120 feet wide on Wisconsin Avenue, and 120 feet deep, was purchased from the City of Milwaukee. Adjacent property will provide parking space for customers and employees.

In announcing the purchase, Mr. Krueger, formerly in the letterpress business for 18 years, said: "The move is an expression of our faith in the future of lithography. Our ten years' growth and progress have given us that faith. When peace comes, advertising will be a chief factor in exploiting and explaining new products, and in re-establishing new markets. Lithography will be one of the important processes by which such printed advertising will be produced. We feel we must be ready for 'the day after the day', and not wait until victory to begin preparing. Then, too, we feel a very definite obligation to our men in service. They want, more than anything else, to come home to job security and a future. We feel that lithography's role in post-war printed advertising, with its greatly expanded use of color, will give them that opportunity."

The company also operates a Chicago branch under the name of Northern Lithographing Corporation, 600 W. Jackson Blvd., which firm they purchased four years ago.

Associated with Mr. Krueger, who is president and treasurer, are: Robert A. Klaus, vice-president; Arthur M. Wood, secretary and salesmanager; and Harry Quadracci, plant superintendent.

WPB News and Notes

Factors Governing Appeals for Additional Print Paper

ON January 13, the Printing and Publishing Division of WPB issued three Supplements No. 1 to Limitation Orders L-240 (newspaper), L-244 (magazine) and L-245 (book). In each of the Supplementary orders, it is made plain that the factors which will be considered in handling appeals for additional print paper under the newspaper, magazine and book limitation orders in 1944 are granted only to provide relief, where possible, from undue and excessive hardship which would be created if the order were applied without modification to an exceptional set of circumstances. Appeals which do not contain proof establishing this type of hardship will be denied.

Conditions which will be considered are set out in the revised supplements covering future appeals for additional paper and include the following:

Newspapers (*L-240* — Extraordinary growth of population in newspaper trading areas since Jan. 1, 1943, requiring additional paper to maintain adequate service in communities, or other unforeseen circumstances which may be considered as undue hardships.

Magazines (*L-244*) — Unusual seasonal variations in publishing schedules requiring a redistribution of quarterly quotas; increased need for religious or instructional publications required by the armed forces, or any unforeseen, unusual, extraordinary or emergency conditions which may constitute undue hardships.

Books (*L-245* — Establishment of quotas for occasional publishers who do not use paper every year and who used none in 1942; as well as needs for armed forces publications, or any other unusual conditions similar to the magazine situation.

WPB's Printing and Publishing Division states that no grants will be made to publishers who do not practice economical usage of paper or who could meet requirements through paper conservation.

Each of the three supplements defines "adjustments", economical usage, procedure of appeals, gives procedures relative to hearings, and other details connected with appeal hearings.

Leap Year Ex. Quota Newsprint Granted

PUBLISHERS of daily newspapers were granted a supplementary paper consumption quota for publishing on Leap Year Day, February 29, 1944, by the War Production Board Printing and Publishing Division on January 27.

The amount required to print these additional issues on February 9 throughout the United States is estimated as 5954 T.

Chrome Pigments Placed Under Order

UNDER Allocation Order M-370, issued by WPB on January 21, manufacturers of chrome pigments in the printing ink industry are permitted to obtain and use 50% of their 1941 purchases of the grouped chrome pigments but are allowed no additional supplies for filling Government orders.

Chromium chemical supplies are critically short. The order puts chromium oxide green and zinc chromate under complete allocation effective February 1. The other chrome pigments—chrome yellow, green and orange, molybdate chrome orange and hydrated chrome oxide—are grouped, and purchase and use in the first quarter of 1944 are limited to 25% of a user's aggregate purchase of these pigments in 1941. This is exclusive of orders of the grouped pigments for specified Government agencies which are exempt from the restrictions of the order.

Does Not Tell Newspapers How To Use Newsprint

THE War Production Board has in no sense changed its policy of not attempting to tell newspapers how they may use their supply of newsprint, Donald M. Nelson, Chairman of WPB, told members of the Newspaper Industry Advisory Committee on January 14.

"Our job is simply one of telling the papers how much newsprint they can have," he said. "The available supply will be divided up without fear or favor and without competitive advantage."

He pointed out that the supply of newsprint was definitely limited by the greatly increased demands for wood products from all sides since the war, by the inability to get usual requirements from Sweden, and by the shortage of manpower in the woods.

He declared that WPB would "stick to its policy" in the newsprint and wood pulp field; that there is no confusion within the Board concerning the supply and the demand, and that progress is being made to solve the problem.

"We have taken literally thousands of actions in an effort to increase production and we have obtained the cooperation of every agency in Washington," he said. "Furthermore, we are not playing favorites. We are not trying to tell you how to run your papers, or how to use your newsprint."

Harold Boeschenstein, acting director of the Forest Products Bureau, followed Mr. Nelson with a breakdown of figures showing that the planned "stockpile" to which many objections have been raised because of the acute shortage of newsprint, actually will amount to less than 10,000 tons in the second quarter of 1944, of a total estimated production of more than 800,000 tons.

. . . YOUR 4TH WAR LOAN QUOTA

WHETHER your plant meets its quota, or fails, lies largely in *your* hands. Your leadership can put it over—but if you haven't already got a smooth running, hard hitting War Loan Organization at work in your plant, there's not a minute to lose.

Take over the active direction of this drive to meet —*and break*—your plant's quota. And see to it that every one of your associates, from plant superintendent to foreman, goes all-out for Victory!

To meet your plant's quota means that you'll have to hold your present Pay-Roll Deduction Plan payments at their all-time high—plus such additional amounts as your local War Finance Committee has assigned to you. In most cases this will mean the sale of *at least* one $100 bond per worker. It means having a fast-cracking sales organization, geared to reach personally and effectively every individual in your plant. And it means hammering right along until you've reached a 100% record in those *extra* $100 —or better—bonds!

And while you're at it, now's a good time to check those special cases—*growing more numerous every day*—where increased *family* incomes make possible, *and imperative,* far greater than usual investment through your plant's Pay-Roll Deduction Plan. Indeed, so common are the cases of two, three, or even more, wage-earners in a single family, that you'll do well to forget having ever heard of '10%' as a reasonable investment. Why, for thousands of these 'multiple-income' families 10% or 15% represents but a paltry fraction of an investment which should be running at 25%, 50%, or more!

After the way you've gone at your wartime *production* quotas—and topped them every time—you're certainly not going to let anything stand in the way of your plant's breaking its quota for the 4th War Loan! Particularly since all you are being asked to do is to sell your own people the finest investment in the world—*their own share in Victory!*

LET'S ALL BACK THE ATTACK!

This space contributed to Victory by

PRINTING EQUIPMENT ENGINEER

Of the total production in the first quarter, 819,000 tons, he said, all but 88,000 tons will go to newspapers.

Shoppers Given Latitude

PERSONS who issue such publications as shopping guides, free-distribution newspapers, or want-ad periodicals, are given certain latitude in the use of their print paper quotas, according to interpretation No. 1 of the commercial printing Order L-241 announced by the War Production Board Printing and Publishing Division. If, for example, a person issued a shopping guide in 1941, he may, if he wishes, use his paper quota to publish a free-distribution newspaper, or a want-ad periodical in 1944, or vice versa. The amount of paper that a person may cause to be used in printing these publications in 1944, and each year thereafter, is limited under Schedule II of Order L-241 to 75% of the weight of paper that he caused to be consumed in 1941 for these products.

Print Paper for Red Cross Supplement Exempted from Newspaper Quota

NEWSPAPER publishers, who elect to distribute the American Red Cross War Fund Drive Supplement as a section of their papers, need not include the print paper used as part of their consumption quota, according to a Direction of the War Production Board Printing and Publishing Division announced by WPB.

In connection with its War Fund Drive to be held during March, the American Red Cross has requested certain publishers to distribute with their newspapers a special supplement depicting Red Cross work. A four-page, tabloid-size, rotogravure section, printed at the expense of the Red Cross, will be furnished to certain newspapers without charge. The section contains no advertising, and no masthead or folio lines identifying the particular newspaper, which acts merely as a distributing agent.

The paper consumed in printing the section has been deducted from the commercial printer's quota under Order L-241.

Waste Paper Still a Vital Need

RECEIPTS of waste paper at paper and paperboard mills have fluctuated during the past 35 months from a high of 651,000 tons in March 1942 to a low of 395,000 tons in July of the same year. Recently, monthly receipts have been about 500,000 tons. Mill inventories have steadily declined throughout 1943, showing that the present rate of consumption by mills is considerably in excess of receipts at the mills.

Annual total net supply (production plus imports, less exports) of paper and paperboard in the United States, during 1941, 1942 and 1943 was slightly under 20 million tons each year. Waste paper accounted for approximately 30 percent of the total supply. It is estimated that about 20 million tons of paper and paperboard will again be required in 1944. The manpower shortage has affected the cutting of wood for pulp purposes and decreased receipts at the mills. As a result, in order to reach the 20 million ton supply in 1944, waste paper receipts at the mills must increase from 30 percent to approximately 40 percent of the total, or 666,000 tons a month, or 8 million tons for the year. This rate has never been attained in any of the 35 months ending November 1943.

Availability of Yellow Inks

WPB Order M-370, issued January 21, which limits chrome pigments for printing ink manufacture, according to a statement release by Secretary David H. Sloane of the National Association of Printing Ink Manufacturers, does not in any sense, restrict the use of yellow inks by the advertiser, publisher, printer or lithographer. It affects ink manufacturers only. Chrome pigments as a class are reduced, but these include some of the oranges and greens as well as yellows. Ink makers in many cases, can turn to other pigments to maintain the supply of oranges and greens, thereby allowing additional chrome for yellows. Furthermore, alternate pigments are available to augment the total supply of yellow inks.

An analysis of the industry made by the National Association of Printing Ink Makers, indicates that the ink requirements of the graphic arts can still be met with the supplies permitted under M-370 and by the exercise of the ink makers' usual ingenuity in meeting demands made upon him.

Do you want to know
WHEN YOU CAN GET Rouse
EQUIPMENT?
Nearly every printer is in need of equipment for replacement or for added capacity.
You may need a Rouse Vertical Miterer, Band Saw, Lead and Rule Cutter, Hand Miterer, or other Rouse Time-Saving equipment. Much of this equipment is unobtainable because Rouse facilities are being used for war work.
Heavy demand is anticipated after the war. If you will require Rouse equipment, write, naming the kind, and we will notify you when it is ready. A Rouse catalog will be sent at your request.
Rouse Lead and Rule Cutter
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Printing Patents . . .

Covering patents issued December 21, December 28, January 4, January 11, January 18 as on page 1.

This data is compiled exclusively for Printing Equipment Engineer by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading for the dates specified.

For copies of patents listed here, specify the patent numbers and send 10c for each separate patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,338,911. MACHINE FOR BINDING BOOKS, especially books with a few pages such as advertising and sales literature, in which the pages are held by a series of rings at the back of the book. The machine is operated by foot pedal. It mechanically holds binding and uncurls the rings so that the pages to be bound can be placed in position and then allows the open rings to spring or curl back into shape through holes that have been previously punched in page edges. Invented by Charles Edward Emmer, Chicago, Ill. Assigned to General Binding Corporation, Chicago, Ill. Application August 22, 1938. 6 claims.

2,339,586. METHOD OF MAKING BOOK COVERS of thermo-plastic or thermo-setting resins. Cover is made up of laminations or several plies of resin impregnated sheets of kraft or absorbent paper or fibrous material pressed together to form a flat panel. Outer sheet may be heavy absorbent paper impregnated with urea-formaldehyde and then plasticized or made flexible by the addition of an alkyd resin. It is claimed that a book cover of this type is exceptionally durable and resistant to soil and grease. Invented by Richmond J. Roberts, Dubuque, Iowa. Assigned to Farley & Loetscher Manufacturing Company, Dubuque, Iowa. Application July 28, 1941. 15 claims.

Composing Room Equipment:

2,338,489. TYPING MACHINE for use in preparing print for transfer to a printing roll or plate to be used in offset printing. The letters or characters are typed on a strip of paper, which strip is then severed to permit separation of the words of the respective lines so that they may be appropriately spaced from one another. The line is justified by positively defining the left and right hand marginal limits and inserting justifying spacers between the respective strips of paper or other material bearing the printed words and equally spacing the latter within marginal limits. The ink used for the typing is of the transfer type and after the line has been typed and justified, it is transferred to a sheet of paper or other flexible material for reproduction as in the usual offset printing operation. Invented by Frank P. Campbell, Cheverly, Md. Unassigned. Application March 24, 1941. 12 claims.

Feeding, Folding, Delivery:

2,337,585. PAPER WINDING MACHINE capable of simultaneously winding a plurality of independent rolls and capable of simultaneously ejecting all of the wound rolls. The apparatus automatically opens the winder shaft bearing caps of a rewinder machine by a sweeping motion in one direction, ejects the wound roll by a sweeping motion in opposite direction, and then feeds a spare winder shaft to the machine. Invented by Earl E. Berry and Lloyd Hornbostel, Beloit, Wis. Assigned to Beloit Iron Works, Beloit, Wis. Application January 31, 1942. 20 claims.

2,339,204. WEB ALIGNING DETECTOR FOR PRINTING PRESSES, which is capable of accurate operation at web speeds up to and exceeding 600 feet per minute. Device is free of inertial forces, whereby misalignment may be more speedily corrected. Misalignment is indicated by periodically repeating a pattern or a series of perforations upon the web. It is possible to note from such pattern or perforations the direction of misalignment and the invention provides mechanism for correcting abnormality in the direction indicated. Invented by Donald C. Stockbarger, Belmont, and John L. Jones, North Billerica, Mass. Assigned to Stockton Profile Gauge Corporation, Lowell, Mass. Original application May 5, 1937, now Patent No. 2,220,736. (See report in December, 1940, Printing Equipment Engineer.) Divided and this application October 7, 1940. 6 claims.

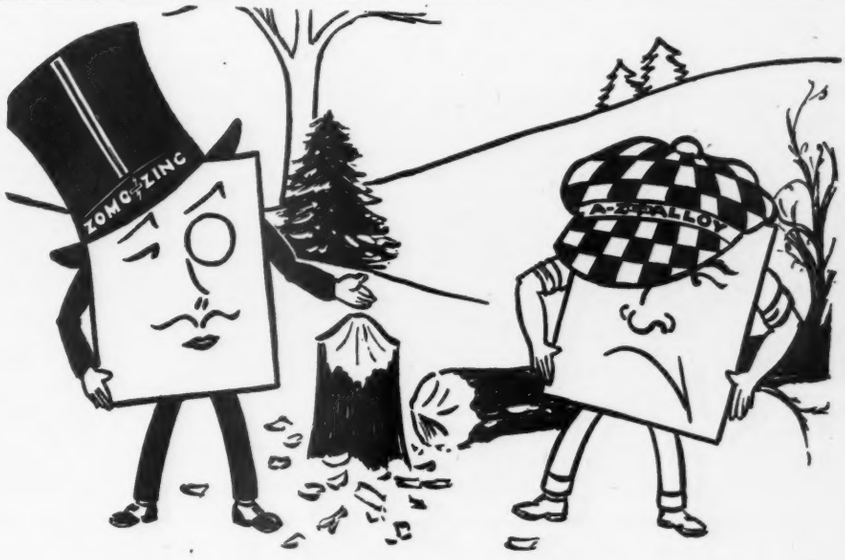
2,339,268. APPARATUS FOR DELIVERING SHEETS of paper or other stock from a cylinder to a pile. The invention supplies suction to steady the sheets immediately prior to delivery so that when they are freed by the delivery apparatus they will be properly positioned on pile. When the delivery mechanism releases the sheets, a current of air is used to blow the sheets toward their ultimate position. A novel construction is provided for conducting air for suction and blowing purposes and also for gas for ink-drying burners between a stationary point at side of the apparatus and the reciprocating carriage. Invented by Samuel A. Huffman, Avalon, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application October 2, 1939. 26 claims.

2,339,557. RECEIVING AND-OR PROPELLING CONTINUOUS WEB MATERIAL such as paper, fabric, webbing, etc., through a drying chamber. The web contacts are so constructed as to prevent marking the web or disturbing any coating or impregnating treatment thereon. The web receiver is a skeletal drum with inner paddles to circulate drying air. The transverse bars on drum which receive the web are U-shaped and carry a waterproof filler strip of "Transite." Filler strip is V-shaped, the point, or apex, contacting the web surface. Invented by William T. Runals, Akron, Ohio. Assigned to The Firestone Tire & Rubber Company, Akron, Ohio. Application January 23, 1942. 6 claims.

Miscellaneous:

2,337,348. PRINTED MOISTUREPROOF WRAPPING or packaging material, either in form of tissue or a bag, characterized in that printed areas or surfaces are at least as moistureproof as original transparent material although the material is a regenerated cellulose sheet with a coating, containing a cellulose derivative and wax, which is deleteriously affected by printing. The sheet is printed in opaque colors by either gravure or anilin process. A transparent coating is directly printed over at least the printed indicia with a transparent moistureproof composition containing a solvent which does not affect printed indicia or original moistureproof material. Solvent is evaporated at elevated temperatures to produce a thin lustrous transparent coating not over .0001 of an inch thick and adhesively bonded to indicia. Invented by Karl E. Prindle, Shaker Heights, Ohio. Assigned to The Dobeckmun Company, Cleveland, Ohio. Application February 2, 1940. 8 claims.

(Continued on next Page)



"Who didn't chop down that cherry tree ?"

The *chopped* cherry tree has become a national symbol of truthfulness . . . a device which permits people to come out and make a flock of healthy admissions.

But, many individuals and industries today don't require this yearly reminder. They've nothing to hide . . . nothing to apologize for. They never did chop down a cherry tree . . . no way . . . no how.

This applies particularly to the engraving industry. Certainly no group has done a more conscientious job in making possible the distribution of important war news in a form that is bound to be true . . . and at the same time conserving strategic materials.

The makers of Zomo Electric Zinc and A-Z Alloy are proud to be included in this group. Truthfully speaking, they also feel proud of the continuous record of quality of these metals, which are still being made according to the same tested standards . . . same electric induction process . . . machine-cut finish . . . precision register . . . Backote.

You can order Zomo Electric Zinc and A-Z Alloy from your regular metal suppliers in the United States or Canada.

ZOMO ELECTRIC ZINC ◆ A-Z ELECTRIC ALLOY

Plate Making:

2,337,453. MACHINE FOR PREPARING AND GRAINING PLATES of metal or glass used in offset lithography. A single eccentric is used and the graining tray is gyrated by this eccentric by pure rotation and centrifugal force much as a bucket of water may be swung in a horisontal circle at the end of a rope. The eccentric has no part in supporting the tray or absorbing the centrifugal force set up, but merely imparts a rotary movement to the tray. Cupped guiding and retaining members are used on both the base and the tray in conjunction with ball-shaped members or cylindrical plates to both guide the tray perfectly in its proper orbit and also to take care of the centrifugal forces exerted by the weight of the tray. Counterweights are eliminated. Small lithograph plates may be clamped in the bottom of the tray of this graining device. 14 claims. Invented by Flournoy Corey, Fred Doetsel, Jr., and Robert Donald Pitts, Cedar Rapids, Iowa. Unassigned. Application August 3, 1940. 14 claims.

2,338,558. METHOD OF TREATING AN INTAGLIO CYLINDER having engraved cells in the surface thereof, for applying a coating or marking material in predetermined quantities to predetermined areas of a sheet or web and for altering character of such coating. Method comprises filling engraved cells in portions of the surface with a solution of a heat convertible resin and a solvent, causing solvent to evaporate, and heating cylinder to an elevated temperature to cause resin remaining in each cell to be converted into an impervious mass. Example of material that may be used is a mixture of an alkyd resin known as "Rezyl 12," a maleic acid modified ester gum such as "Amberol-801," and titanium dioxide. Invented by Arthur M. Wickwire, Jr., Mountain Lakes, N. J. Assigned by mesne assignments to Interchemical Corporation, New York, N. Y. Application October 22, 1940. 3 claims.

2,338,877. ROLLER PRINTING MACHINE of the step and repeat type used in photochemical production of a design on a printing roller. The image or design is positioned on the central portion of film and after looping film over roller its ends are clamped so that circumferential center line through the center of loop thus formed is in a plane perpendicular to the axis of the roller and so that distances from ends of loop to center of roller are equal and the distances from ends of loop to the center of image on film are equal. When carrying the image-bearing portion into and out of contact with the roller, relative movement is caused between the two and in such a path that distances from the ends of the loop to the center of roller remain equal. Invented by Frank A. Stead, Rye, N. Y. Assigned to Linotone Corporation, corporation of New York. Application July 26, 1941. 2 claims.

2,338,878. ROLLER PRINTING MACHINE similar to that covered by patent 2,338,877, above. This invention provides mechanism to accurately control the required change in relative positions of the positive and roller between successive reproducing operations, i.e., to insure that the reproduction of the design element created therefrom bears the intended predetermined relationship with the other reproductions of the design element created on the roller. Invented by Frank A. Stead, Rye, N. Y. Assigned to Linotone Corporation, a corporation of New York. Application July 26, 1941. 5 claims.

2,339,467. PREPARATION OF FLEXIBLE PRINTING PLATES for subsequent application to form or plate cylinders of rotary printing machines. A fixture is provided to expeditiously secure a locating or clamping bar to the leading edge of each plate of a set of multicolor plates in predetermined positional relation to the design and register marks on each plate. The plates are used on a number of similar form cylinders having similarly located longitudinally extending recesses for reception of the locating bars, so that when a plate is wrapped around a cylinder with its locating bar positioned in its recess, a design on the plate will positionally correspond to similar designs on the plates on other cylinders of the set to thus produce accurate register in multicolor printing. Invented by William K. Eckhard, Newark, N. J., and Edwin W. Goodwin, New Rochelle, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application February 13, 1942. 14 claims.

2,339,481. PROCESS OF PREPARING PRINTING PLATES or drop-out half-tone positives by which all half-tone screening dots are eliminated in the highlight sections, as particularly adapted for illustrations used for newspaper advertising. A half-tone negative made in the usual way, and a half-tone mask negative with tone sections dropped out (see following patent), are superimposed on an unexposed photographic film or plate which is exposed therethrough to create the drop-out half-tone positive. By the method, it is not necessary to do any retouching or finishing by hand, thus eliminating the need for manipulating wet films, retouching the plates, etc. Also it is not necessary to make a series of exposures upon the plates. The process may also be used in the field of photography and cinematography. Invented by Arthur L. Huttkay, Newark, N. J. Unassigned. Application March 6, 1942. 17 claims.

2,339,482. PROCESS OF PREPARING HALFTONE MASK NEGATIVES, the application for this patent being a division of that for 2,339,481, above. A photographic mask negative is made by treating the entire surface of a continuous tone negative of the original drawing with a subtractive photographic reducer until the tones in those areas of the negative which correspond to the tone sections of the original drawing substantially disappear. If the original drawing also contains line sections, the areas of the mask negative corresponding to these line sections should be transparent, too. Finally, the thus produced masked negative is fixed, washed, and dried. Invented by Arthur L. Huttkay, Newark, New Jersey. Unassigned. Original application March 6, 1942. Divided and this application December 1, 1942. 18 claims.

Printing Inks and Related Chemicals:

2,337,552. PROCESS OF REMOVING HYDROCARBON IMPURITIES from an aqueous solution of a water soluble saturated hydrocarbon sulphonate having at least 5 carbon atoms. The water-soluble compositions are useful for the preparation of printing pastes, lakes, inorganic pigments, and improving flotation processes of pigments. Process comprises mixing with the solution a hydrocarbon which is solid at 20° C., allowing mixture to stand, removing the layer of molten hydrocarbon, cooling aqueous phase and removing hydrocarbon which separates out in solid state. Invented by Clyde O. Henke, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Company, Wilmington, Del. Application August 15, 1940. 5 claims.

2,338,128. INCORPORATING DRYING METALS such as lead, cobalt, iron, nickel, etc., into enamels, printing inks, etc. The drier comprises mixing together at least one hydroxy drying metal salt having present therein free hydroxide of the metal and a non-volatile, water-insoluble, non-aromatic, organic acid capable of producing, when chemically reacted with such hydroxy salt, a drier soluble in oxidizable drying oils and oil varnishes, and heating mixture to a temperature sufficiently high to bring about chemical reaction between hydroxy salt and acid. Invented by Arthur Minich, Mountainside, N. J. Assigned to Nuodex Products Co., Inc., Elizabeth, N. J. Application April 23, 1942. 7 claims.

2,338,151. PRINTING INK UTILIZING CORN PROTEIN as an ingredient of the vehicle which may vary from an entirely aqueous one to a non-aqueous one. Corn protein may be used in inks for news, rotogravure or planograph printing and for absorption, heat and flash-dry application. An example is: 400 parts of full corn protein containing 75% protein, 800 parts of diethylene glycol and 600 parts of water are mixed in a mechanical mixer. Then 1¾ parts of sodium peroxide are added to reduce coloring material present in this product, and mixing is continued for 30 minutes. Then 14 parts of caustic soda are added and the mass is heated to 150-160° F. to effect dispersion of the protein. The resulting mass has a pH of 8.3. This is an ink base into which pigment or filler may be milled. Invented by Harry M. Weber, Chicago, Ill. Assigned to American Maize-Products Company, New York, N. Y. Application February 17, 1941. 15 claims.

2,338,252. PIGMENT PRINTING PASTE for textile printing containing as the pigment binder modified polyvinyl alcohol. Paste comprises a pigment dispersed in a mixture of polyvinyl alcohol solution and carbamide-formaldehyde resin, which mixture will gel on storage, and sufficient of a nitrogenous base, ammonia, morpho-

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A prime objective of the mechanical executive is to eliminate as many petty production annoyances as possible. Because display and illustrative composition must pass through several hands, the exact position for mounting of cuts on wood or metal base often is disregarded because the original layout isn't sent "down the line" along with the composition containing the cuts. Result: The composing room or stereotype superintendent must answer management's complaints about out-of-position cuts.

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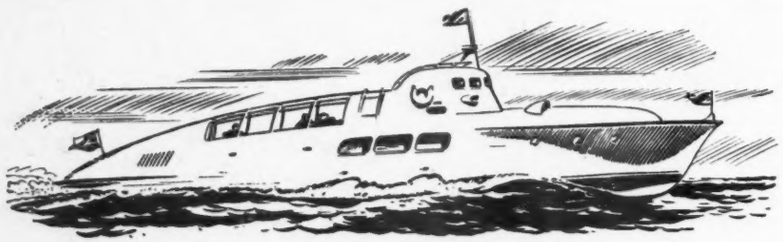
lene or pyridine, volatilisable from a thin film of the composition in a relatively few minutes at 150° C., to inhibit gelation. Invented by Carl M. Marberg, Elmhurst, N. Y. and John Abrams, Jersey City, N. J. Assigned to Interchemical Corporation, New York, N. Y. Application October 18, 1941. 2 claims.

2,338,516. NEW VAT DYESTUFFS for dyeing and printing fibers of animal or vegetable origin such as wool, silk, leather, cotton, hemp, rayon, etc., and possessing fastness to light. Products also may be converted into leuco sulfuric acid esters. Heterocyclic carboxylic acids incapable of being vatted and containing at least one six-membered heterocyclic ring that has at least one of the atoms sulfur and oxygen as hetero compounds, are reacted with vattable compounds containing amino groups and preferably selected from the anthraquinone series. Example: Thianthrenedicarboxylic acid, orthodichlorbenzene and thionylchloride are heated to form thianthrenedicarboxylic aciddichloride which is mixed with 1-amino-5-benzoylaminoanthraquinone and pyridine. Acetic acid may be used. Invented by Walter Kern, Sissach, Paul Sutter, Basel, and Richard Tobler, Riehen, Switzerland. Assigned to Society of Chemical Industry in Basle, Basel, Switzerland. Application October 2, 1941. 3 claims.

2,338,627. CONDENSATION PRODUCTS of alkylene oxides and symmetrical disubstituted guanidines, useful in printing inks, dye pastes, and as flotation agents. Example is a symmetrical 1,3-disubstituted 2-ethylol guanidine wherein the substituents are aryl radicals. Invented by Walter P. Ericks, Stamford, and James H. Williams, Riverside, Conn. Assigned to American Cyanamid Company, New York, N. Y. Application September 5, 1942. 2 claims.

2,338,709. AZO COMPOUNDS which can be used as dyes by dyeing, printing, stenciling, or other methods. They can be prepared by grinding dye to a paste in the presence of a sulphonated oil, soap or other dispersing agent and dispersing the paste in water. The dyes are useful for dyeing cellulose acetate, wool, silk, Nylon and Vinyon and can yield a variety of shades depending upon components used. An example is: 1-amino-2-chloro-4-acetobenzene is diazotised and the product is added to cold hydrochloric acid solution of N-phenyl-3, 4,5-trihydroxypiperidine. The coupling is completed by adding sodium acetate to render mixture neutral. Dye is washed and dried. Invented by Joseph B. Dickey, Rochester, N. Y. Assigned to Eastman Kodak Company, Rochester, N. Y. Application October 30, 1941. 14 claims.



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Teletypesetter, on the other hand, has been fully developed and proved in many composing rooms. Production can start as soon as our war work ends.

Teletypesetter users report averages of 350 to 400 lines per hour on large volume straight-matter—increases of 50% to 100% in output—and greater accuracy.

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To speed Victory, buy War Bonds regularly!

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2,338,728. AZO DYE which can be used in dyeing, stenciling or other methods for treating cellulose acetate, silk, casein wool, Nylon, Vinyon and lacquers. An example is: o-anisidine is diazotized. The compound is added to a cold aqueous sodium carbonate solution of beta-ketocyclobutylsulfone. Coupling reaction is completed by adding acetic acid. The dye is recovered by filtration, washed and dried. Invented by James G. McNally and Joseph B. Dickey, Rochester, N. Y. Assigned to Eastman Kodak Company, Rochester, N. Y. Application September 27, 1941. 12 claims.

2,338,908. NUCLEAR NON-SULFONATED ALPHA AMINOANTHROQUINONE COMPOUNDS which can be used as dyes by dyeing, printing or stenciling. The dyes are useful for dyeing organic derivatives of cellulose. Dispersing or solubilising agents are soap, fatty acids or the sodium or ammonium salts thereof, etc. In pyridine there is dissolved 1-beta-hydroxyethylaminoanthraquinone and acetic anhydride is added. After three hours the mixture is poured into water, and precipitated dye is recovered by filtration, washed and dried. Invented by Joseph B. Dickey and James G. McNally, Rochester, N. Y. Assigned to Eastman Kodak Company, Rochester, N. Y. Application November 25, 1939. 3 claims.

2,339,739. METHOD OF DYEING OR PRINTING cellulosic fibers by impregnating with a diazotized polyamino-phthalocyanine compound (such as in a printing paste) and subsequently submitting the impregnated fibers to an aftertreatment to decompose diazonium groups liberating nitrogen. The aftertreatment compound may be water, formic acid, ethyl alcohol, potassium iodide, sodium formate, and various other compounds. The cellulosic fibers are colored violet to green and gray shades of good fastness, including fastness to washing. Invented by Harold Blackshaw and Norman Hulton Haddock, Blackley, Manchester, England. Assigned to Imperial Chemical Industries Limited, a corporation of Great Britain. Application May 22, 1942. 8 claims.

2,339,740. METHOD OF DYEING OR PRINTING cellulose fiber similar to method described in patent 2,339,739, above. A coupling component is used, in aftertreatment, which is free of sulfo, carboxy or similar water solubilising groups. Examples are beta-naphthol, 2-hydroxy-3-naphthoic anilide, etc. Invented by Harold Blackshaw and Norman Hulton Haddock, Blackley, Manchester, England. Assigned to Imperial Chemical Industries Limited, a corporation of Great Britain. Application May 22, 1942. 8 claims.

Printing Presses and Equipment:

2,337,386. IMPROVED TYPOGRAPHIC PRINTING PRESS for use with thermoplastic or hot melt inks which are liquid when heated and solid when cooled. Instead of the usual ink distributing system, the press utilizes an enlarged form roller. Ink is applied to roller for subsequent application to the plate or printing cylinder by means of an aligned system of metal milling and coating cylinders which may be readily heated to desired temperature for melting and spreading ink. Cylinders have progressively increased surface speeds to cause a stretching or thinning of film of ink to desired thickness. Entire heated portion of press may be insulated from rest of press due to aligned arrangement of the cylinders. Form roller is cooled so that ink transferred thereto will tend partially to set on the surface and be remelted by contact with heated printing cylinder and transferred to the type for application to the web or sheet of paper. Ink remaining on form roller after contact with plate cylinder is distributed over entire form roller by a heated doctor blade cooperating with same. Invented by William F. Grupe, Lyndhurst, N. J. Assigned to Interchemical Corporation, New York, N. Y. Application September 23, 1940. 9 claims.

2,338,261. APPARATUS FOR SIMULTANEOUSLY CUTTING AND COATING cardboard or other sheet material. It is particularly useful for producing signs of the easel type. The bendable portion of the back of the sign is specially treated to prevent this portion from adhering to front. Existing machinery may be adapted for the cutting and coating operations. For instance, printing presses of the platen type may be used by substituting in the press a die cutter and associated cutting means for the printing type and by utilizing the usual inking rollers for applying to coating means paraffin or other water-repellant material. Result is that when the cardboard is pressed by the platen against the die-cutter and coating means, the sheet material is cut to provide the bendable portion and the coating is applied to prevent it from adhering to front portion. Invented by Louis Roth, Forest Hills, N. Y. Unassigned. Application September 23, 1940. 2 claims.

2,338,561. INKING MECHANISM for rotary intaglio type printing machines, embodying an improved primary ink deflector to remove surplus ink from surface of a printing cylinder supplied with ink from an ink fountain, and a doctor blade for removing surplus after the deflector has acted. Ink receiving pockets in the fountain are adjacent the ends of the doctor blade, each having a drain communicating with the fountain whose end walls form outer end walls for the pockets. An ink deflector below the doctor blade has walls forming inner end walls for the pockets and a bottom wall adjacent the cylinder. Invented by Adolph M. Zuckerman, New York, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application October 16, 1941. 11 claims.

2,339,275. NOVEL INKER for printing presses in which ink is delivered to a form roller by mechanism which is shiftable upon changes in diameter of the form roller to maintain proper cooperative relationship therewith. Thus the necessity of moving the form roller away from the

Manufacturing Research

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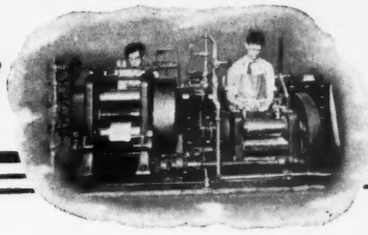

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THE KID *COUNTS OUT LOCAL LINGO JOB*

DEAR POP:

Glad to hear you folks are well. Write often, and tell others to write to their boys. It pops us up to hear from home.

Speaking of home, I ran into an old friend yesterday, Pop. Like this, it happens: After a tough scrap, we take a town. A little later I'm catching 40 winks when a flashlight, with the Sergeant's puss in back of it, wakes me up. He tells me to follow him.

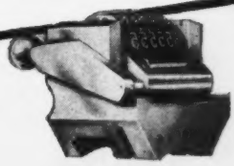
I do that. It's easier than arguing. We go trudging off in the dark, and come to an old shop. There's a group around a dark object, and I see it's a printing press. The Sergeant asks me if I know anything about presses. So I cautiously say "maybe". He says "Hop to it — Print this proclamation pronto".

While fiddling with the press, Pop, I see it. Yep — you guessed it, a Wetter Numbering Machine. I greet it like a long lost pal. A lump comes into my throat. It's a bit of Brooklyn in this foreign land. The Sergeant interrupts my reverie with a sharp remark, and I proceed to get the press and the Wetter back in operation. Before leaving, I oil the Wetter and give it a friendly pat. You know, Pop, a Wetter is just like the rest of us: all it wants is some attention — a little oiling and cleaning — and it'll work it's head off.

Thanks for that extra War Bond.

The Kid

Wetter Lock-Wheel
One of many models



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printing cylinder is obviated. When the diameters of the form roller become reduced, they may be moved closer together by moving the outermost form roller toward printing cylinder and toward neighboring form roller. This increases the area of the form effectively inked by all of the form rollers for a given amplitude of movement of the form whereas previously, when worn outermost form roller had to be adjusted away from the printing cylinder, the opposite effect was obtained. Invented by John Kunz, Pittsburgh, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application December 10, 1940. 11 claims.

2,339,310. PAPER GRIPPERS for printing presses with mechanism for moving or shifting them from operative to inoperative position. The shifting mechanism cooperating with a spring is so arranged and constructed that movement of the shifting mechanism renders the spring inoperative. The shifting mechanism may take the form of a cam cooperating with the spring, the cam being shaped so that movement thereof upon movement of gripper to inoperative position, renders the spring inoperative. The shifting mechanism may also take the form of a lever to cooperate with the spring in which case spring may be disconnected from one portion of lever to bear against another portion when gripper is in operative position. It is claimed this mechanism insures exceptionally quick operation. Invented by William H. Wise and August A. Saul, Pittsburgh, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application March 18, 1940. 10 claims.

For patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D. C.

George Langford is mechanical superintendent of the Valley News Corporation, 11109 Magnolia Blvd., North Hollywood, Calif. Richard Porter is no longer connected with the Valley News Corporation.

Technical Literature

These bulletins may be obtained either from the manufacturer direct or if you will address your request to *Printing Equipment Engineer*, we will be pleased to pass it along to the manufacturer.

Synthetic Newspaper Rollers

Ideal Roller & Mfg. Co. has issued a four page bulletin in which the utility of Ideal DX Synthetic Newspaper Rollers are discussed, in the light of recent governmental regulation which "does not permit the use of crude or natural rubber as a roller covering for newspaper press rollers." Company states no critical essential materials are used in the manufacture of Ideal DX synthetic newspaper inking rollers. This bulletin is available upon request.

Better Electrotypes from New Plastic Molds

A four page bulletin descriptive of Printing Plate Research's new plastic molding process in making electrotypes has been published by The Monomelt Company. Several steps employed in the plastic molding operations are shown by illustrations. The company wishes to emphasize that the equipment cannot be supplied now for commercial use, but this informative technical bulletin is yours for the asking.

General Technical Book Catalog

A new catalog of technical books has been issued by The Chemical Publishing Co., Inc., 26 Court Street, Brooklyn 2, N. Y. This catalog includes the late books on chemistry, technology, physics, general science, mathematics, engineering, radio, aviation, foods, formularies, cosmetics, gardening, medicine, metals, technical dictionaries, etc. A copy of this catalog will be sent gratis to everyone who is interested in keeping up with the latest technical and scientific progress.

Electronic Control

In Bulletin No. GEA-4126, General Electric Company describes the fundamentals and various applications of electronic control. This 12 page bulletin is well illustrated. The text explanation is couched in simplified language. Explained are the fundamental principles of electronic tubes and their operation, and the construction of the thyratron tube. The functions of eight of the more widely used industrial type tubes are listed. Described and illustrated are practical applications of electronic control.

How Electronic Tubes Work

This 24 page illustrated bulletin GET-1226, published by General Electric Company, starts off for the uninitiated with a disarming discussion about the many common applications of electronic tubes in industry and science. By way of getting across a simple explanation, GE presents a double-page spread in which appear a graphic illustration and text matter to illustrate that "an electronic tube is a valve." Various other charts show the four basic parts of an electronic tube, what the heater does, what the cathode does, what the anode does, what the grid does, and what the envelope does. Gas-filled and high-vacuum tubes and how they differ are explained. The various named tubes and their functions are illustrated and described. When asking for this bulletin, specify the identifying number, GET-1226.

H. B. Lilley, formerly Assistant Chief Inspection Engineer, has been promoted by the Steel and Tube Division of The Timken Roller Bearing Company, to the position of Sales Development Engineer. He will specialize in the application of mechanical tubing to machine tool products and other engineering applications.

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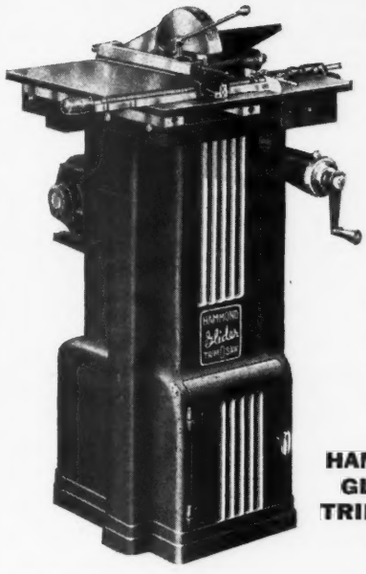

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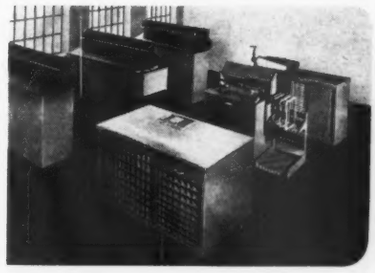
THE ARSENAL
OF THE PRESS ROOM



Back of the Army's guns there must be an efficient arsenal for production of ammunition. Guns cannot shoot without shells.

Presses cannot print without type forms and back of every pressroom must be a composing room capable of delivering good printable forms promptly. This requires the best equipment and skilled workmen armed with the most efficient tools to enable them to produce at low cost.

The necessity to overcome by human effort the inefficiencies of equipment in a common cause of composing room losses. Older equipment that still looks good is often out-dated and unsuitable to modern conditions where high costs are a serious menace to profits.

Support your presses with a composing room adequately equipped with Hamilton furniture. It will help to stop many hidden losses.

HAMILTON
MANUFACTURING COMPANY
TWO RIVERS
WISCONSIN

WBP Order L-241

(Continued from Page 21)

Converted Paper Products, and L-239, Folding and Set-Up Boxes, are not covered by this Commercial Printing order. Whenever a printer receives an order for an item which he thinks may fall in one of these other groups, the only safe thing for him to do is to get a copy of the particular order in question and see if the item meets the definition in that order. If he is still in doubt, he should inquire of the War Production Board, Printing and Publicating Division, Washington, 25, D. C., Ref: L-241 as provided in paragraph (w) of the order.

By virtue of their specific exemption from other orders, certain items are under the control of L-241. These include the following: Army and Navy camp, post, station or unit "newspapers" or news sheets, shopping guides, want ad periodicals and publications in newspaper format distributed free or at nominal cost (as excluded from L-240); magazine reprints which contain less than 50 percent of the editorial content appearing in any issue of a magazine and which do not come within the definition of "books" (as excluded from L-244); and the following items which are excluded from L-245—salesbooks; business-entry books, etc. (except school workbooks); catalogues or advertising brochures issued by a person who manufactures, distributes or offers for sale the products, commodities or services listed or illustrated therein; directories issued by a person whose primary business is not publishing; and school or college annuals and yearbooks. These are all controlled by Order L-241. Note, however, that magazine supplements, inserts and other printed matter physically incorporated into a magazine are included in L-244, Magazines, and are to be supplied only on magazine quota under L-244. A similar provision applies under L-240 for newspaper supplements, inserts and other printed matter physically incorporated into a newspaper or delivered together with it.

Order L-245 restricts the amount of paper permitted for "books" There remains only one condition under which the number of pages is a factor. That provision excludes from Order L-245 "paper-bound pamphlets or booklets of less than 64 pages (except bound music folios) *Issued by a person whose primary business is not publishing*". This exclusion is intended to place under Order L-241, instead of under L-245, many pamphlets produced by manufacturers in connection with the use or promotion of their products. These pamphlets of 32 to 60 pages were formerly included in the book order because they carried a nominal sales price.

Order L-241, as revised December 31, 1943, permits fewer unrestricted items than was the case in the earlier issues of this commercial printing order. As it is now written, the order provides that a printer is not limited in the amount of paper which he may use for printing ordered and paid for by a department or agency of the United States, its territories or possessions, or any State, County or Municipality of the United States. This rule applies whether the printing is ordered as a separate item or is included in a contract for something else purchased by a government agency. Also unrestricted are official Army or Navy post, camp, station or unit newspapers or news sheets if they are ordered by the officer in command of the Army or Navy establishment on official War Department or Navy Department purchase orders, requisitions or contracts, and if they contain no paid advertising, and if they are not owned, edited or operated by civilians but are run entirely by military personnel although the printing may be done in commercial plants.

It should be understood also that the commercial printer may print envelopes, boxed and packaged paper stationery and papeteries and other items which were produced under the control of Order M-241-a without any restriction except that of their availability, since they have already passed through the control of the converter's order. However, a printer may not make these converter's items out of flat printing papers except that they be charged against his quota. For example, a commercial printer may not print letterheads, except those furnished as boxed or packaged stationery, without

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Handbook for Pressmen

BY FRED W. HOCH

This is a practical technical discussion of all platen and cylinder press operations in the commercial pressroom. The language used by the author is *your* language—the text is written simply and pertains to the operations actually performed in the pressroom.

To give an idea about the contents of the book we quote some of the chapter titles:

Methods of Line-up	Overcoming Offset
Presswork	Workups—Cause and Remedy
Makeready, Platen Presses	Slurs—Cause and Remedy
Makeready, Cylinder Presses	Repairing Plate Batters
Overlays and Makeready	Ink
Close Register	Color Mixing and Matching
Setting the Rollers	Metallic Inks

Some of the more unusual operations to many pressrooms are covered by the author in the following chapters:

Printing Water Color Jobs	Details of Embossing
Two Colors on One-Color Press	Hot-Plate Embossing and Paneling
Patent Base Speeds Imprint Jobs	Gum Label and Embossed Seal Printing
Printing on Cellophane	Die-Cutting Methods
Printing Facsimile Letters	The Stencil Screen Process

And much other valuable pressroom information. This book is bound in brown cloth, contains 236 pages, 6 in. by 9½ in., is well illustrated with line diagrams and a number of charts.

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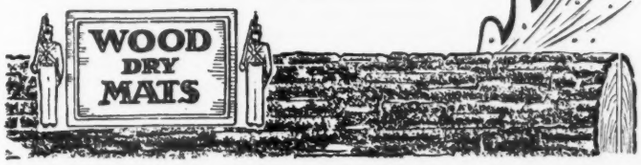

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charging them against his commercial printing quota.

Of course, a commercial printer may produce without restriction any products which are covered by the "publishers" orders (L-240, L-244, L-245 and L-289) insofar as the publisher has a quota and provided that the publisher has furnished him the certification required by the particular order which controls the product being ordered. L-289 does not yet have such a required certification.

What Materials Are Restricted?

All six of the printing-paper orders naturally restrict the use of paper. In all the orders, the term "paper" is broadly interpreted. It includes any grade, quality, type, basis-weight or size of paper, paperboard or paperlike substance, whether reclaimed wholly or partly from printed or unprinted waste or made entirely from virgin fibre. Also, in all six orders, "paper" includes production waste whether or not this waste is subsequently salvaged for other uses. Such salvaged paper need not be counted a second time under any quota. The restriction on the use of paper under each of the orders is against the person and the product controlled by the specific order, even if the blank paper is supplied by some other person.

Schedule I of Order L-241 imposes specific maximum limits on the basis weight, thickness, area or weight per unit of paper which may be used for producing 16 specific classes of items, as follows:

1. Art reproductions, without advertising—basis weight 25 x 38—120 lb.
2. Diaries, date books, desk calendar pads, and advertising memo pads 9" x 6" or smaller—basis weight 17 x 22—16 lb. Larger than 9" x 6" basis weight 17 x 22—20 lb.
3. Dodgers and handbills — basis weight 24 x 36—35 lb.
4. News letters and loose leaf services other than books (as defined in Order L-245)—basis weight 17 x 22—16 lb. if printed on one side; basis weight 17 x 22—18 lb. if printed on two sides.
5. Accounting records, books and forms—basis weight 17 x 22—32 lb.
6. Corporate securities, checks, domestic and foreign currency—basis weight 17 x 22—24 lb. (*Continued on next page*)

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Better molding with "MATCHED" sets. Order 2 or 100—they will be matched in all their qualities. Each blanket has been scientifically tested and graded. We can furnish HARD & EXTRA HARD (Special) blankets that are matched in weight and density.

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7. Notes, contracts, mortgages, wills, deeds and insurance policies—basis weight 17 x 22—20 lb.

8. Letterheads—basis weight 17 x 22—16 lb.

9. Card indexes and card records—basis weight 25½ x 30½—140 lb.

10. Time cards—caliper 0.014 in.

11. County record books—basis weight 17 x 22—36 lb.

12. Prospectuses for the sale of securities—basis weight 25 x 38—50 lb.

13. Legal briefs and records on appeal—basis weight 25 x 38—50 lb.

14. All other office, business, financial and legal forms, except blank books—basis weight 17 x 22—16 lb.

15. Road and street maps and guides for civilian use—basis weight 17 x 22—20 lb.

16. Telephone directories—body basis weight 24 x 36—28 lb; cover basis weight 22½ x 28½—110 lb.

It so happens that the weights specified in the foregoing list as being the heaviest weights permitted for art reproductions, corporate securities, checks, domestic and foreign currency, and telephone directory covers are heavier than Order L-120 normally permits to be manufactured. Paper which Order L-241 permits to be made in these heavier weights under Schedule I may be used only for the specific purposes allowed by the schedule.

The restrictions imposed by Schedule I of L-241 do not apply to paper which was manufactured before October 21, 1943, so that a printer's or supplier's inventory as of that date is not frozen.

These basis-weight restrictions, of course, do not affect the printers quota in any way except that, in the main, they will tend to "stretch" his paper usage.

When Is Paper "Used"?

Sometimes paper is put through a press more than once, either by the same printer or by different printers. These extra printings may be for back-up of the sheet, for additional colors, or for later imprinting at a point of distribution. Since it is evident that each sheet is to be counted but once, the application of the first color to the first side constitutes use; and the deduction from quota occurs at the time such first impression takes place. This principle applies to all orders here considered "used" when the newspaper publisher puts the pre-printed sheets into production. In this instance, the supplier of the "preprint" newspapers is considered as the supplier of the print paper rather than as a printer or publisher.

Transit damage is not considered as "use" under any of the orders; but all production waste is considered as "use" in all orders here considered whether or not this waste is subsequently salvaged for other uses.

Order L-241 provides that paper is "used" when ink is first applied to it in the production of commercial printing. When a job is started in one calendar quarter and runs over into the next, the paper actually "used" during each quarter must be charged against the printer's quota for that quarter. The entire job may not be regarded as if it were started and finished in the same quarter.

How Are Base Tonnage (Base-Period Usage) and Quota Figured?

In figuring out his quota or allowable usage under any of these six orders, it is first necessary for the printer or publisher to determine the amount of paper he used, or caused to be used, in the year (or calendar quarters thereof) which the particular order or orders under which he operates has established as the "base-period."

It is necessary in making these computations to keep in mind that each of the paper orders is a separate kingdom to itself—that paper which was used to produce in the base year an item controlled by one order may not be used as a claim for quota under any other order. Consequently, a printer who engaged in the activities of more than one of these orders (either directly or through his customers) during the base year will have to set up his paper consumption separately for each product which is represented by one of these limitation orders. Similarly, a publisher who engaged in the activities of more than one of these orders will have to set up separate records for each product. Since some orders use 1941 as the base year and some use 1942, it is necessary for some printers to break down their paper consumption in detail for both years.

Order L-241 establishes the year 1941 as the base period for commercial printers. Although quotas for commercial printers are established on a quarterly basis, the order permits the printer to use either his consumption of paper during the corresponding calendar quarter of the base year or one-fourth of his entire 1941 consumption of paper as the basis for applying the required cuts to determine his quota for any calendar quarter of 1944.

If a printer selects one-fourth of the entire year 1941 as his base, he should:

(i) Add up the total pounds of paper which he used in 1941 for all printing;

(ii) Subtract the pounds of paper used in 1941 for the items covered by the other paper orders—L-240, L-244, L-245, L-289, L-294, L-177 (Wall Paper), L-239 (Boxes) and M-241-a (Converted Paper Products);

(iii) Subtract the pounds of paper used in 1941 for the unrestricted governmental items and camp newspapers listed in paragraph (k) of Order L-241;

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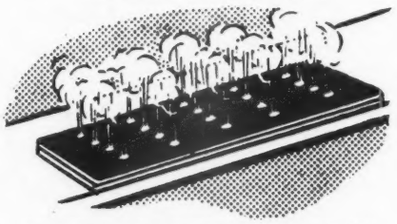

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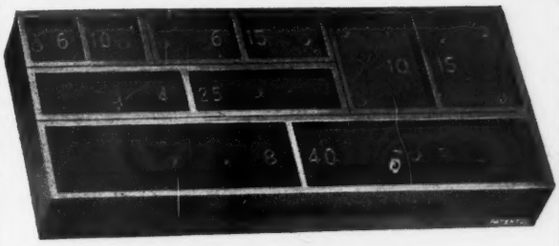

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(iv) Divide this result by four to arrive at an average consumption figure for each quarter of the year 1941. This figure is the printer's *base-period usage* or *base tonnage* and is subject to the appropriate percentage cut to arrive at his quota or allowable usage for *each* quarter of the year 1944.

If a printer selects the corresponding calendar quarter of 1941 as his base, he should:

(i) Add up the total pounds of paper which he used during the same calendar quarter of 1941 for all printing;

(ii) Subtract the pounds of paper used during that calendar quarter of 1941 for the items covered by the other paper orders—L-240, L-244, L-245, L-289, L-294, L-177, L-239 and M-241-a;

(iii) Subtract the pounds of paper used during that calendar quarter of 1941 for the unrestricted governmental items and camp newspapers listed in paragraph (k) of Order L-241. The resulting figure is the printer's *base period usage* or *base tonage* and is subject to the appropriate percentage cut to arrive at his quota or allowable usage for the *corresponding* calendar quarter of the year 1944.

If a printer used less than 10 tons of paper in any quarter of 1941 as shown in the results of the foregoing calculations, he may use the same amount in the corresponding quarter of 1944. Such a printer is not permitted to increase his consumption of paper to 10 tons in a quarter of 1944 if he used less than that amount in the same quarter of 1941.

Schedule II of *L-241* establishes a consumption limitation on a printer's customers who order certain catalogs, directories, shopping guides and school annuals. This schedule limits such customers in 1944 to 75 percent, by weight, of the paper they caused to be consumed in the printing of those items in 1941. It is not necessary for the weight of each copy or edition to be reduced, as long as the total weight of paper consumed in the printing of all copies or editions is reduced by the required amount. Paper used to produce items in this Schedule II must come out of the commercial printer's quota as well as being limited by the customer's quota.

What Borrowing and Carry-Over Are Allowed?

Orders L-241, L-294, L-244 and *L-289* permit the affected printer or publisher to add an extra 15 percent to his quota for a particular quarter if he uses that much less during the next quarter. These four orders also provide that, if he uses less than he is allowed for one quarter, he may increase his use in later quarters by that amount. In the case of Order L-289, this borrowing and carry-over provision applies to the box quota of the publisher as well as to his paper quota.

What Quota Has A New Printer or Publisher?

Orders L-241, L-294, L-244, L-245 and *L-289* provide that anyone who, during the base period, did not print (Orders L-241 and L-294) or publish (Orders L-244, L-245 and L-289) the type of product covered by the particular order does not have any quota from which to produce that product.

When May Quotas Be Transferred?

The rules governing the transfer of quotas are contained in Priorities Regulation 7A. These rules apply to all orders of the War Production Board. While these rules may not be stated here in their entirety, and the regulation should be read thoroughly before any transfer of quota is undertaken, they provide in general that "if a producer's business is sold as a going concern and continues, in the hands of the purchaser, to make substantially the same product at the same plant and with substantially the same personnel (other than executive officers), the identity of the producer will be deemed unchanged . . . Any other arrangement whereby one producer purports to assign to another producer his quota for use of a specific material or for production of a particular product is prohibited and invalid unless specifically authorized by the War Production Board."

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Justrite Safety Products provide the necessary added protection from dangerous fires. The Safety Can makes pouring of flammable liquids easy. The Safety Filling Can has flexible metal pouring spout and separate filler opening. The Oily Waste Can is the safe, sane way to store oily, grimy waste.

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FOR SALE—30 in. x 40 in. Vallete litho darkroom camera complete with two copyboards, one operating on camera rails, other on separate structure; positive holder; acid-blast focusing glass; steel focusing tape; Douthitt diaphragm control coupled to 80 c.m. Zeiss Apo-Planar lens. Smaller copy board on rails is 35 in. x 35 in. and 2-motor control from darkroom regulates forward-backward and up-and-down movement. Larger board has face 8 feet x 5 feet, with steel reinforced supporting structure measuring 14 feet x 5 feet. This larger board is also fully automatic, vertical and lateral adjustments being controlled by push buttons within dark room. This larger board is equipped with magnets whereby original steel lofts may be used as direct copy in case camera is used in template work. Lateral movement is 3 feet to either side of center line; vertical range is 1½ feet above or below center line. All electrical equipment is AC 60-cycle.

Vacuum printing frame, size 82 in. x 55 in. equipped with pump driven by ½ horse power, 115/230 AC 60-cycle motor. Has electric hoist arrangement for raising and lowering top half of frame as well as rotating entire frame to either vertical or horizontal positions.

Douthitt whirler 60 in. diameter, will take plate size 35 in. x 49 in. Motor operates on AC 60-cycle.

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ANTI-FANNING

In connection with the various paper orders of the War Production Board, it should be noted particularly that quotas provided by one order of the Board may not be used for the purposes set forth in any other orders. These provisions combine to mean that a person's quota may be used only by the person to whom it belongs and, even then, only for the particular type of product (commercial printing, book, or magazine, etc.) under which it was established.

If a person conducts a business in which he has a quota under two or more of these paper orders, he must keep these operations separate for quota purposes; and he may not use the paper quota which accrues to him as a result of manufacturing one product during the base period for the production of another product now.

Orders L-241, L-294, L-240, L-244, L-245 and *L-289* are all controlled by the foregoing provisions regarding transfer of quota. Orders L-241 and L-245 have further special interpretations as follows:

Order L-241 provides that "Printer A may farm out certain work by purchasing press time from printer B. This may be done for example, where Printer A cannot fill an order for a customer because he does not have available the right equipment, material, personnel, or facilities. In such a case, where the customer looks only to A for the finished product and where B acts merely as a sub-contractor, the paper may be charged against A's quota, even though B actually does the printing. This does not mean that A may assign his quota to B."

When Is Paper In Inventory?

Under each of the printing paper orders, "paper in inventory" means all the paper which is owned by the printer or publisher and all that is available for his use whether in the publisher's hands, the printer's hands or in the hands of a paper dealer or other person.

(*Continued on next page*)

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A special heat treatment of the steel assures you of extra long life between grinds and a tough edge for all kinds of cutting.
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Factual information on request
Stocks in Principal Cities

What Inventory Is Allowed?
(Delivery Restrictions)

Order L-241 provides that no printer or other person may accept delivery of any quantity of paper if his total inventory of all kinds of paper for use in commercial printing is, or by virtue of such acceptance will become, greater than 60 consecutive days' supply. However, if the amount of a particular item is less than 30 days' supply, he may accept delivery of not more than an additional 30 days' supply of that item, provided the amount purchased is required for his production within 30 days of acceptance even if acceptance of that delivery will increase his total inventory to more than a 60 days supply. The number of days' supply shall be computed at the average daily rate of allowable consumption for the current calendar quarter.

What Certifications Are Necessary?

To Printers—Orders L-244, L-245 and *Schedule II* of *Order L-241* require that a one-time certification be presented to a printer before he may accept orders for the printing of books, magazines or the items covered by Schedule II of Order L-241. This certification, which is the first of the certifications reproduced below, must be supplied to the printer regardless of who supplies the paper.

Order L-241 places on the printer the responsibility for receiving certifications before he may print items controlled by Orders L-244, L-245 and Schedule II to Order L-241. The certification to be used in these cases is as follows:

> The undersigned purchaser certifies, subject to the penalties of section 35 (A) of the United States Criminal Code, to the seller and to the War Production Board that he is familiar with (insert the relevant provision) (i) Order L-244 (Magazines), (ii) Order L-245 (Books), (iii) Schedule II to Order L-241 of the War Production Board and that all printing ordered for items regulated by that order (or schedule), as amended from time to time, will be in compliance therewith.

To Paper Dealer or Mill—Orders L-241, L-244, and *L-245* require that a one-time certification be supplied to the paper dealer or mill. No printer or publisher may order paper controlled by these orders unless he furnishes, or has previously furnished, to the paper dealer or mill, the certification substantially as follows:

> The undersigned purchaser certifies, subject to the penalties of section 35 (A) of the United States Criminal Code, to the seller and to the War Production Board that he is familiar with (insert the relevant provision) (i) Order L-244 (magazines), (ii) Order L-245 (Books), (iii) Order L-241 of the War Production Board and that all purchases by him of items regulated by that order, as amended from time to time, will be in compliance therewith.

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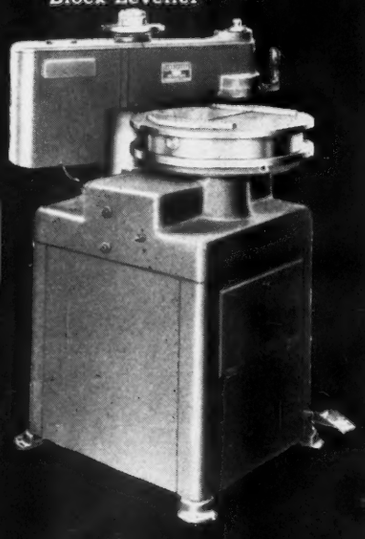
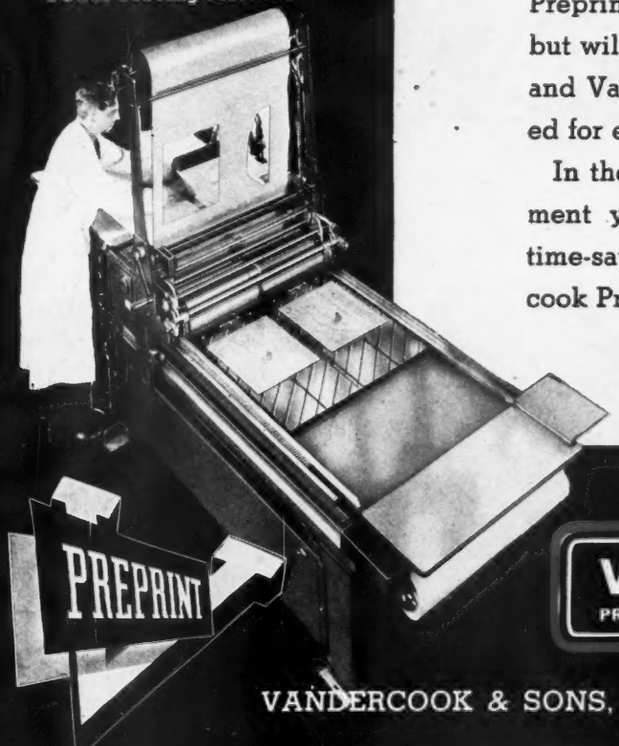
Plate Gauge

No. 10 Vandercook
Block Leveller



No. 232P Vandercook
Power Proving Machine



Suggestions
FOR PREPRINTING

The above circular will give you some practical information on Preprinting. It tells how you can profit by Preprinting, and what to do to get started---using the equipment you have.

The No. 6 Hacker Plate Gauge, the No. 10 Vandercook Block Leveller, and the No. 232P Vandercook Power Proving Machine illustrated, are major pieces that will enable you to get maximum efficiency after you have started to Preprint. These machines are not available now but will be made as soon as necessary materials and Vandercook facilities are no longer required for essential war production.

In the meantime you can make use of equipment you have---and prove for yourself the time-saving features of Preprinting. The Vandercook Preprint circular will be sent upon request.

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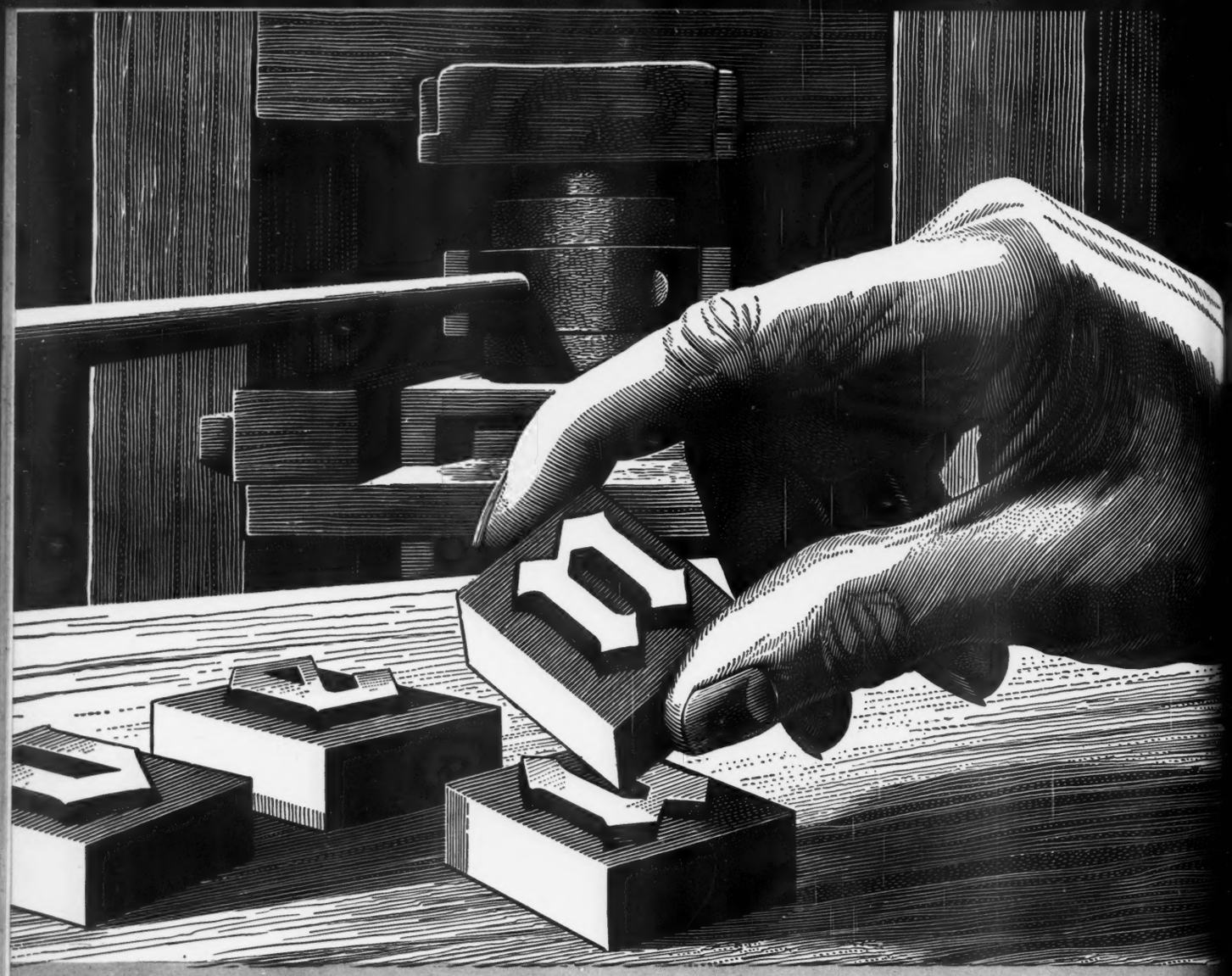

SPARKS FOR MINDS

ALMOST five centuries ago, Gutenberg's invention of movable type started a revolution. It has been going on ever since.

For five times five centuries—and eons before—a *few* men were the privileged rulers—by accident of birth or of circumstance. The *people* were subjects, supporting those thus kept in authority.

However, movable type, by cutting the cost of printing, began the process of making knowledge more widely available. People's understanding then grew. Sparks of hope were awakened in the minds of men...When it became apparent to entrenched authority that permitting wide dissemination of information and ideas might in time destroy their sinecures, censorship was exercised.

In a search for greater freedom, men of many races and creeds crossed the ocean to establish homes on this continent. They and their children founded here a nation dedicated to a new principle: government *by* the people, and *for* the people. And knowing that liberty could be overthrown only by subduing freedom of speech and the press, they provided further that this *basic* freedom should never be abridged.

That system of government created an opportunity for all men to advance, limited only by their efforts. In but a few generations it won for this people a higher standard of living and of human welfare than had ever before been dreamed possible.

America's freedom of the press has proved to the world that the patriotic instinct of an informed plain people can be relied on to govern wisely and well.

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